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**Understanding lecturers' use of Virtual Learning  
Environments to support face-to-face teaching in UK  
Higher Education**

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Submitted for the degree of  
*[Faint, illegible text]*  
Doctor of Philosophy in Educational Technology

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**30<sup>th</sup> September, 2004**

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# Abstract

Many institutions of higher education in the UK have invested in Virtual Learning Environments (VLEs). The main reason appears to be the enhancement of teaching and learning. This thesis sought to understand what was meant by enhancement and this thesis provides a richer picture of actual VLE use than that offered by surveys and user numbers. It concludes that the idea of enhancement comes from the association of Web and Internet-based technology (on which VLEs are built) with the creation of student-centred learning environments. This is important because of research showing a correlation between higher quality learning outcomes and a deep approach to learning and between a surface approach to learning and a teacher-focused approach to teaching.

The focus of this research is the individual lecturer in face-to-face higher education. The aim was to investigate whether VLEs were being used to support student-centred teaching methods. This research took the form of an interview study that began by exploring whether and how VLEs were used. The pilot study helped re-focus the interview questions and clarify what was meant by student-centred teaching methods. 31 humanities and social science lecturers, from ten higher education institutions, were interviewed for the main study, in order to explore why and how a VLE was used and to identify contextual factors that impacted on that use. They were also asked to complete the Approaches to Teaching Inventory (ATI).

Reasons for use were classified as original motivation (interest and pressure) and intended use (course management and the facilitation of learning). Four sets of issues were identified as impacting on use: student, technical, pedagogic and institutional. The ATI scores suggested that interviewees were more student- than teacher-focused in approach and therefore more likely to adopt student-centred methods. An analysis of comments from four selected transcripts confirmed this.



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All the interviewees and contact people without whom there would have been no thesis data but who, for obvious reasons, cannot be named.

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# Chapter 1: Introduction

This research began as a personal quest to improve my own skills and understanding of information technology (IT). It evolved into an examination of the perception that the use of Web and Internet-based technology can enhance teaching and learning, through an investigation into the use of Virtual Learning Environments (VLEs such as WebCT and Blackboard) in UK Higher Education.

This introductory chapter explains the way in which the research area was developed and defined. Section 1.1 begins by explaining the context and constraints of the research and outlining my expectations<sup>1</sup>. Section 1.2, describes the personal journey<sup>2</sup> that was the initial impetus for the investigation of this area and the way in which this became a research topic. This was done in order to illuminate any preconceptions and bias I may have as a researcher. Section 1.3 explains the focus of the research, details the research questions and describes the research framework. Finally section 1.4 outlines the structure of the thesis and provides a short description of each chapter.

## ***1.1 Research context and constraints***

This research is about the use of Web and Internet-based technology to support face-to-face teaching and learning in conventional or campus-based universities, what has recently come to be called “blended learning”. It is not about its use in distance education or about

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<sup>1</sup> Wolcott (2001) recommends beginning an account of qualitative research by outlining expectations and delimitations.

<sup>2</sup> Again, Wolcott (2001) recommends including a personal account to explain the context of the study including initial interest, the underlying issue and how the setting was approached.

fully online education (as defined by Bell, Bush, Nicholson, O'Brien, & Tran, 2002, see Chapter 7, p. 267). Although it draws from literature about the use of information and communications technology (ICT<sup>3</sup>) in distance education, because that is where the communications element in particular first found widespread use, and about online teaching and learning.<sup>4</sup>

This research is specifically about the use of Virtual Learning Environments (VLEs)

“... which use Web and Internet-based technology to create a learning environment where interaction and collaboration can take place in the virtual world of Web and Internet-based applications. The tools provided aid the teacher(s) in controlling and tailoring the virtual environment for use by their students, who are able to interact with, contribute to and move through the content. The main difference between a VLE and other computer-based learning or computer-supported learning environments is the possibility of communication and collaboration with peers and teachers within the same virtual environment that holds the content. Content may include the results of collaboration and student contributions, not only course materials. The tools used include synchronous and asynchronous computer mediated communication software and those that enable the delivery of course materials online.” (Adapted from Moron-Garcia, 2001)

This research focuses on VLEs, as a specific example of ICT, because of the increased uptake of VLEs in higher education (Browne & Jenkins, 2003; Jenkins, Browne, & Armitage, 2001) and because they seem to be the vehicle chosen by institutions as a way of encouraging lecturers to make use of ICT to support their students. They are also

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<sup>3</sup> In the mid to late 1990s, with the advent of the World Wide Web and widespread adoption of e-mail, what was once termed IT became ICT, to acknowledge the use of computers to facilitate communication.

<sup>4</sup> It is interesting to note how the vocabulary used to describe this form of technology supported teaching and learning is still in a state of flux, how many ways it is labelled and what pre-conceptions particular labels bring with them.



associated with the enhancement of teaching and learning (op. cit.; O'Donoghue, Fleetham, Dalziel, & Molyneux, 2000).

The context of this research is UK higher education, but more specifically English universities and colleges of higher education. England and Wales have a distinct regulatory framework to that of Scotland and when looking for research sites it was logistically easier to gain access to English universities and colleges, being based in the English Midlands. Moreover there were more instances of earlier VLE adoption than at potential Welsh sites.

This research concentrates on the role of the lecturer<sup>5</sup>, because it is they who are responsible for selecting (within institutional limits) and setting up the learning environment for the students. If they cannot demonstrate the purpose of use or motivate students to use a VLE then it is likely a VLE will not be used and any potential advantages to be gained from its use will be lost. I was interested in finding out how lecturers were coping with new teaching environments because as Thorpe states, "... the reality of change presents the teacher with new challenges ..." (1999, p.40).

This research is not about the student perspective, although interviewees demonstrated that they were concerned about the impact of VLE use on students and mindful that they should take account of student feedback (see Chapter 6). It is about the way in which learning is encouraged and facilitated by lecturers. Lecturers' beliefs about teaching and learning and how to create the most effective learning environments are fundamental to improving student learning. Research has shown that lecturers' conceptions of teaching correlate with

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<sup>5</sup> Lecturer is the generally accepted term for academic teaching staff in UK universities.

teaching approaches that in turn correlate with student learning approaches and learning outcomes (see Kember, 1997 for an overview; Marton & Saljo, 1997; Trigwell, Prosser, & Waterhouse, 1999).

This research used a qualitative approach not located in any one tradition, but informed by ethnography and grounded theory as indicated in Chapters 3 and 4. The bulk of the data was collected through interviews with lecturers using a VLE to support face-to-face teaching and learning. The aim was to explore the intentions behind their use of a VLE, the way in which they used a VLE, to identify any problems they had encountered and whether VLE use changed the way they taught or encouraged them to adopt a more student-centred approach. Data was not collected through observation of use, because there was little use of a VLE during contact time (for reasons explored in Chapter 6) and the amount of research access that could be negotiated was limited, as was the time interviewees were able to spend participating in this research. One quantitative instrument, the Approaches to Teaching Inventory (Prosser & Trigwell, 1999; Trigwell & Prosser, 2004), was used for the main study. My intention was to provide a check on some of the interview data collected, because what lecturers actually do and say they do may be very different (Murray & MacDonald, 1997) and it acted as a proxy for the observation of teaching methods.

My own previous experience, in secondary education<sup>6</sup>, suggested that while some lecturers might be enthusiastic about adopting the use of ICT and might be able to find well thought out ways of applying it, most lecturers would be nervous and need a great deal of persuasion and support. It also suggested that most of the issues arising would stem from problems with the technology (usability, functionality, misunderstandings about what is



possible) and that much of what was achieved would just be better presented, faster and more information rich versions of what was already happening. Many secondary teachers seemed to equate IT use with losing control. They seemed to forget that ground rules or etiquette could be set just as with classroom interaction.

My Masters research (Moron-Garcia, 2000) suggested that there would be uncertainty among lecturers regarding the most effective way to use a VLE and hence a lot of archival use (that is, the dumping of text-based materials such as lecture notes and handouts, supporting what happens off-line, but changing little). The lecturers interviewed for that study had been concerned about an increase in the use of e-mail and about student use of poor quality Internet resources. Therefore I expected to find lecturers using VLEs to provide guidance regarding the use of online resources and indications of where to find quality resources. Further factors affecting use included the level of technical support and a lecturer's technical expertise or comfort level. Lecturers were also concerned about student IT literacy levels and their ability and willingness to cope with an online environment. Within that particular institution there was formal policy indicating the level of VLE use expected, so I anticipated that institutional policy might drive use.

The following section explains the way my personal experience informed this research and caused to me ask a series of questions that led to a research topic.

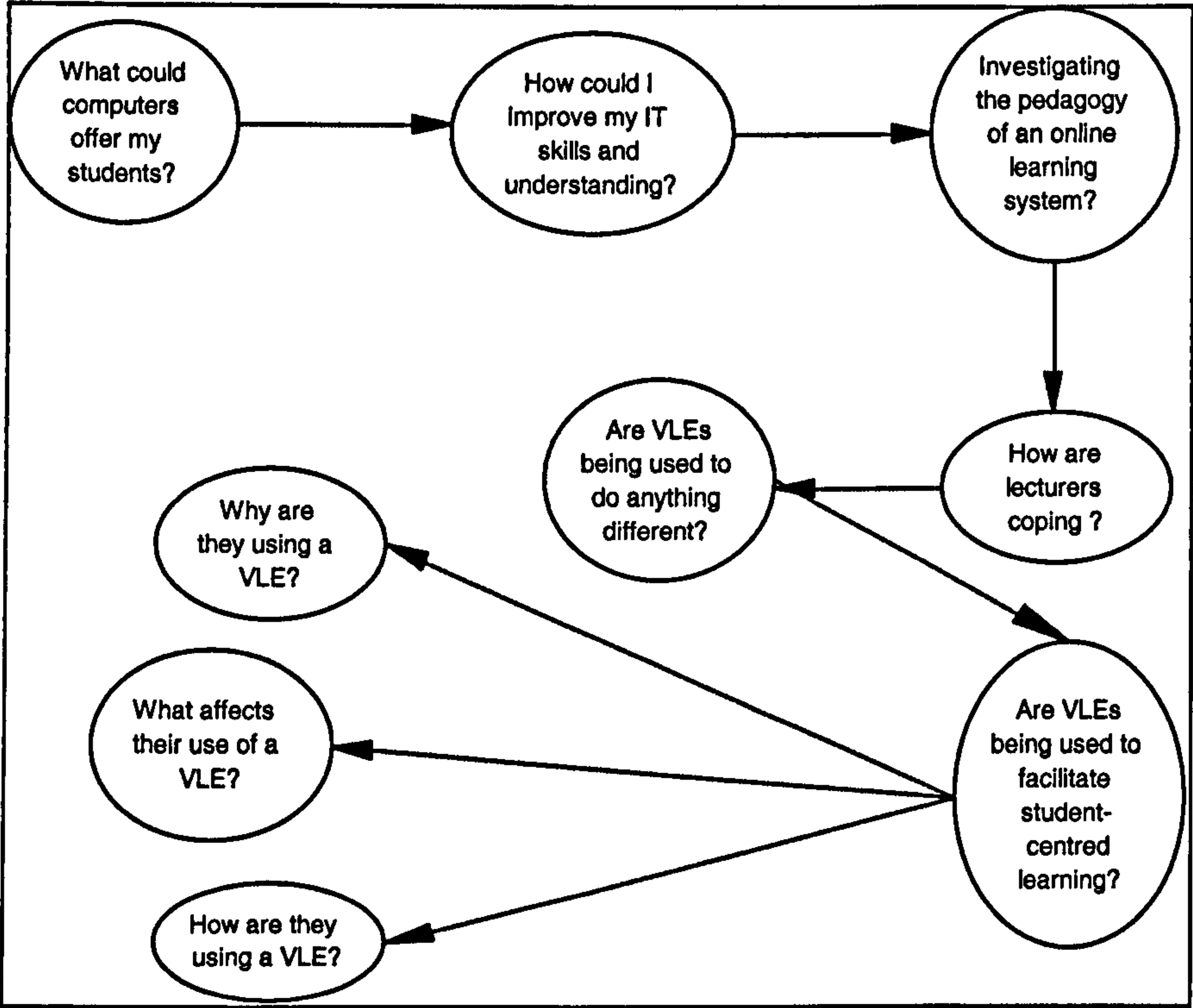
## ***1.2 Personal journey to research topic***

In the previous section I began to show how this research was informed by my experience as a secondary school teacher and by work done for a Masters in Information Systems.

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<sup>6</sup> The secondary education sector typically covers schooling from the age of 11 to 18 years old.

Figure 1.1 shows the questions that guided this personal journey: from trying to understand my own personal practice and finding a way to improve my skills to an exploration of the use of Web and Internet-based technology, in the form of VLEs.



**Figure 1.1: Developing and defining the area for research**

The initial impetus for this research came out of personal interest: a desire to understand the way information technology (IT) could be used to support my students’ learning and a need to feel more confident in my use of IT. I was a teacher of Modern Foreign Languages in a UK secondary school at the beginning of the 1990s, a time when schools were increasing investment in computers. The main reason for use seemed to be a desire to teach students the IT skills it was thought they would need in later life.

At that time the main educational use of computers in my school and subject area was to present materials more professionally. We were encouraged to ‘desktop publish’



worksheets and the keener students regularly used software applications to word process documents or create pictures, all of these were printed out and presented in 'hard copy'. Software packages that could be used to create language exercises existed but were hard to come by as budgets were tight and access to computers on which they would run was restricted. Furthermore there were concerns about the value of doing exercises in this way. It was difficult to convincingly answer questions like: why not use paper-based exercises, how do you ensure that language learning and not IT remains the focus of the lesson and why sit children in front of screens when they should be interacting with each other and the teacher?

Another use of computers was to access a wider range of resources. Initially this was through dial-up services such as Prestel 'Campus Gold', with an interface much like 'Teletext', which could only be used by a teacher downloading materials. Then, as computers evolved into multimedia PCs and with the advent of the Windows operating system and the Internet, students were able to access information from a CD-ROM encyclopaedia such as 'Encarta' and from the Web.

Many of my colleagues were nervous about the use of computers for a number of reasons. They lacked confidence and were reluctant to learn how to use a computer (a commitment that would add to their already substantial workload, learning how to use a computer takes time for the uninitiated). They could not see what added value computer use gave and were concerned about the lack of control that ensued once students were distracted by computers on their desks. Computer use invoked a very different dynamic in the classroom. Technical problems had the potential to disrupt lessons and necessitated colleague support to keep students working (this was difficult to schedule and relied on goodwill). Moreover there was scepticism about the quality of work produced: students

used computers to prepare work that looked good, but was the content of high enough quality to justify the higher marks expected?

In 1997 I went to do a Masters in Information Systems, directed at those who had no previous computing experience. My intention was to improve my IT skills and give myself time to think through computer use. For the final year project I was asked to investigate the pedagogy of an online learning system called a virtual learning environment (VLE – a set of integrated software applications or ‘tools’ behind a common Web-based interface that supported communication, collaboration and access to materials). This was a small-scale interview study with lecturers and their students in one higher education institution (HEI). Of necessity the numbers were small, because I found that as yet only a small proportion of lecturers actually used the VLE to support their students. The number of ‘users’ shown on the system only represented those registered and led me to question the way VLE use was portrayed.

Bare statistics indicated a number of ‘users’ of the system, but when approached most lecturer users said they were ‘investigating use’ rather than ‘making use’ of the VLE. Students of those lecturers who were ‘making use’ were registered users of the system, but this did not indicate how they used that system. How often students had accessed the VLE, what content had been viewed and what online tasks were attempted could be extracted with the help of the VLE’s ‘tracking’ tool, but this level of detail is rarely mentioned when universities baldly declare numbers of users. Furthermore the tracking system was not very sophisticated, so that a student could rapidly ‘click’ through content pages to register a ‘hit’, but this gave no indication of how long they spent reading the page and, of course, what they did as a result of accessing the information. At that time there had been no studies on the effect of use. This had led some of those interviewed towards the use of the

built-in quiz tool to check students had read the materials (something also found throughout the research reported later in this thesis). The educational value of this was open to question.

Those interviewed had mixed feelings about increased ICT use, their use was exploratory, they were uncertain. They were grappling with the same questions I had: how, why and is it worth it? There was some antipathy to the idea of distance education with which ICT use is often associated<sup>7</sup>, but support for the flexible aspects of use because of the changing student profile. Interviewees commented that the days of the full-time student were numbered as most of their students had to work to support their studies, therefore anytime, anywhere access to resources and course content was useful if students could not attend.

The VLE was used primarily as an “electronic filing cabinet” (a phrase coined by pilot study interviewee B2) and as a way to guide students to useful online resources. There was some use of quizzes to revise and review subject content but the integrated communication tools were only really used for administration and management, rather than facilitating collaborative working, but then these lecturers and students met face-to-face, so perhaps that was the reason. Use depended on the intended purpose and the teaching strategy employed. Although interviewees were wrestling with the application of the VLE to their teaching they had not yet thought about the impact this may have on teaching strategies. The focus was on what the technology could do, not on how the teaching could be changed or enhanced. It was a case of applying it to the teaching strategy in use, more often than not the traditional lecturer plus seminar model, where information was presented or transmitted to students; hence the use of the VLE to display large amounts of content.

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<sup>7</sup> ICT gained widespread use in distance education as a way of compensating for a lack of face-to-face contact and evolved into a tool that supports collaborative working and communication.



Further reading about the use of computer mediated communication (CMC) and about the use of the Web to support teaching and learning, led me to believe that that the VLE being investigated did not have a pedagogy as such. It was a set of tools that could be used to support a range of teaching and learning approaches. Although the linear nature of the in-built menu system had the potential to undermine any benefits derived from the node-linking qualities of hypertext.<sup>8</sup> What was important was the way in which a lecturer decided to use a VLE and whether or not this included the use of the integrated communication tools that gave a VLE added value in comparison to stand-alone Web pages.

A lecturer's ability to use a VLE was dependent on a number of factors, such as their confidence in using ICT and the support that they were given. If the VLE was to become more than an electronic version of course handouts and booklets use was dependent on a lecturer's willingness to think about and adapt their teaching as well as support staff readiness to help try out new ways of structuring resources to take advantage of the affordances of the technology. For example, one Masters project interviewee wanted to create a hypertext linked set of course notes and resources that students could access in whichever order they wanted, rather than being tied to the linear menu generated by the system. However support staff told him that this was not possible.

The need to think about the way technology is used is something that people such as Alexander and Kearsley address. Kearsley wrote that "... technology is often seen as a

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<sup>8</sup> According to Jonassen "... hypertext is a node-link system based upon semantic structures [as opposed to a sequential access system, therefore] hypermedia can map fairly directly the structure of knowledge representing it." (1988)

quick fix, a siren song. ...” and warned that “... educational technology is a distraction ... from what matters most – effective learning and good teaching” (1998, pg. 47). Alexander said that we should not be surprised when expected learning gains are not realised if the new technology is “... used to provide a learning experience that is often essentially the same as that provided using existing technologies ...” She went on to recommend that “...we should decide to use technologies such as multimedia or the World-Wide-Web only when that use provides new opportunities for students to learn - to visualise, to understand, to see complex relationships in ways that are not possible using any other media.” (1995)

The concerns of the Masters project interviewees led me to ask how lecturers might cope not only with an expectation that ICT use would become the norm, but with a requirement to reflect on and possibly change the way they taught, in order to achieve learning gains. The use of ICT and in particular CMC was increasingly being portrayed as having the ability to change what teachers did (see Chapter 2). However, previous experience meant I had reservations about the willingness of lecturers to become involved with greater ICT use, after all what would they gain, except more work? The following are the questions they raised: What level of preparation would be expected and how about making lecture notes and course structures visible to anyone given access? What about their own IT skills level, wasn't it enough to be experts in their subject area? If they made lecture notes freely available would this mean that students would not turn up to class and would they make themselves redundant with classes being taught by less knowledgeable but cheaper teachers or with students just reading the materials? What about the quality of the online information and would the accessibility of lecturers via e-mail mean that they would spend ages emptying inboxes and replying to queries at unreasonable times of the day? And finally, I wanted to know whether the benefits claimed for the online environment, mostly



based on use in a distance education mode, could be found when it was used to support face-to-face or conventional campus-based education.

The following section shows the way these questions about motivations, concerns, the way a VLE might be used and the way use might fit with what a lecturer already did, were used to start defining a research focus. It goes on to explain the formulation of the research questions which evolved as the study progressed, informed by literature and the data collected.

### ***1.3 Research focus***

The purpose of this research was to investigate the use of Virtual Learning Environments (VLEs) to support face-to-face teaching and learning in UK Higher Education. The research focus evolved throughout the period of the research, as is to be expected in a piece of qualitative research where the data collected informs the design of the research, as does the literature encountered, and the whole process is a learning experience for the researcher (Glesne & Peshkin, 1992). As a result the focus moved from an investigation into why and how technology was used, to include an exploration of lecturers' intentions in using a VLE, the teaching approach adopted (as facilitated and encouraged by technology use) and their perceptions of the contextual factors that affected their use.

The research questions were drawn up with reference to literature on the use of Web and Internet-based technology and informed by previous research and experience as described above. They reflected a desire to examine claims that this technology (on which VLEs are based) can and will lead to a student-centred model of education. According to Collis (1996) the creation of student-centred learning environments is one of the reasons to use Web and Internet-based technology. Other researchers argue that this technology will

cause the teacher to adopt the facilitator role needed in the student-centred model of education (Westera, 1999), accentuating the “student as worker and teacher as coach paradigms” (Wegner, Holloway, & Garton, 1999, p. 6).

These claims are allied to the belief that the availability of this technology should lead to the adoption of a “new” student-centred paradigm or pedagogy (Barr & Tagg, 1995)<sup>9</sup> and be used to change the learning experience (Alexander, 1995). They also seem to have given rise to a perception that VLEs can enhance teaching and learning (Jenkins et al., 2001)<sup>10</sup>. I understood enhancement to mean the adoption of student-centred approaches to teaching and learning because of the association with improving student learning. Research has shown a correlation between higher quality learning outcomes and deep approaches to learning (Marton & Saljo, 1997) and between a deep approach to learning and a student-focused approach to teaching (Trigwell et al., 1999).

The context of use was part of the investigation, because of a recognition that

“Teachers may have a certain degree of autonomy, but basically they have to work within the framework and structures dictated by the institution (which in turn has to operate within nationally dictated policies and resourcing limitations).” (Biggs, 1994)

Furthermore the connection between context and teaching approach adopted has been shown by other researchers (Prosser & Trigwell, 1997; Trigwell, Prosser, Martin, & Ramsden, 1998).

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<sup>9</sup> Described as a change from the passive absorption of information to active discovery and the creation of knowledge.

<sup>10</sup> This was the main reason given by senior managers of higher education institutions (HEIs) for moving to or considering the use of VLEs, 43% of those returning a questionnaire, while only 14% of users and those supporting users gave this as a reason, their main reason was flexibility, 49%.

This gave me some starting points for the research questions: were VLEs encouraging the adoption of student-centred methods and what other factors influenced the way VLEs were used (the way a lecturer teaches normally, the functionality of the system, institutional pressure and expectations, for example)? The initial research questions were:

- Can Virtual Learning Environments support student-centred learning and how does the functionality of the system affect lecturers?
- What are motivating factors for lecturer use of Virtual Learning Environments and what prevents their use?
- How are lecturers using Virtual Learning Environments, what methods are they using, and how does this fit into their overall pedagogy?

These research questions were revised and refocused following a pilot study (described in Chapter 3) which identified four areas for enquiry (these are shown on Figure 1.2). The revised questions were:

- Why do lecturers say they are using VLEs?
- How do lecturers say they are using VLEs to support face-to-face teaching in UK Higher Education?
- What do lecturers say supports or hinders their use of VLEs to support teaching and learning?

Figure 1.2 shows the research framework illustrating way the research questions and areas for enquiry overlapped. For example, the context of use will affect the approach to teaching as well as the way a VLE may be used. Some interviewees had concerns about the ability of their students to cope with independent or self-directed learning, therefore this informed the way they structured their teaching and their expectations of VLE use.



This demonstrates the complexity of the issues under investigation and that technology adoption is not just about the technology, nor just about the teaching approach used.

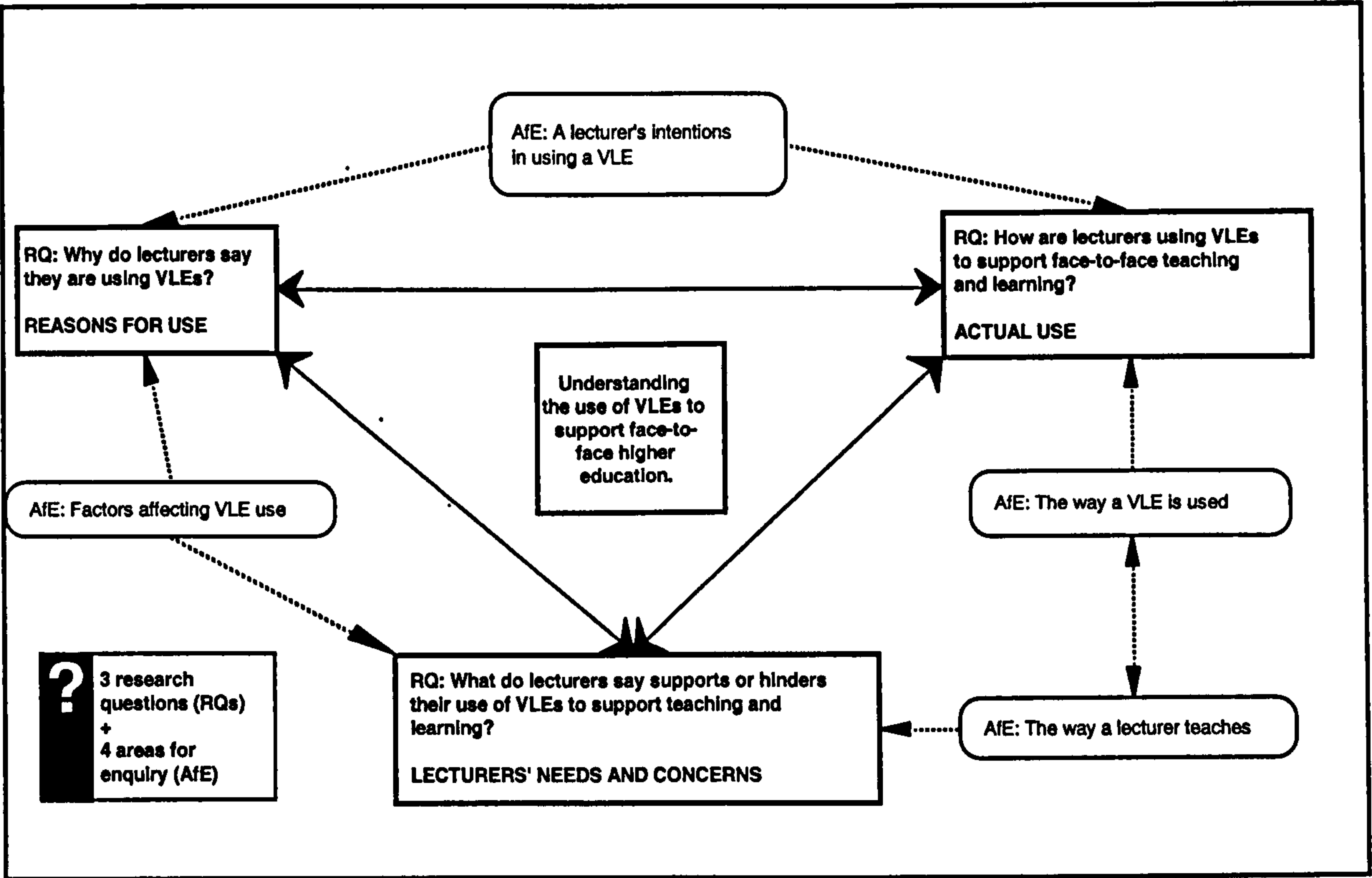


Figure 1.2: Research framework

As explained previously an aim of the research was to examine whether or not VLE use facilitated or encouraged the adoption of student-centred methods. That is, did technology really change what lecturers did, was it really enhancing teaching and learning or was it just used as another management tool? The research questions and areas for enquiry identified the issues that might enable me to answer this. By exploring the reasons behind lecturer use of a VLE I hoped to understand whether lecturers intended to change anything that they did and, by enquiring how they used it, to identify student-centred strategies facilitated by a VLE.

One way in which it might be possible to begin answering that question is by reporting on changing attitudes throughout the period of research. A perception that was often encountered when communicating with interviewees was that the use of Web and Internet-based technology such as a VLE might mean a move to distance education. This was understood as a separation of student and teacher as opposed to the adoption of a particular model or approach to teaching. This may have been linked to their misunderstanding of my perspective, as someone researching at the UK Open University, a distance education provider, who nevertheless made it quite clear that the research focused on use in a face-to-face context. It may also indicate their focus on and preoccupation with understanding the purpose of technology introduction and investment. Sceptics spoken to for the Masters project (2000) cited their antipathy towards distance education as a reason for not using the technology and later there was justified concern about job security and levels of investment at redundancy prone universities: "... I'm not totally sure why the University are going down this particular path because we're told it's not going to be distance learning." (B6)

By the time of the main study (2002) interviewees had changed to asserting that they used the technology to support or enhance face-to-face teaching, not for distance education, and the idea of 'blended learning', the use of ICT to support and enhance face-to-face education, was gaining wider currency<sup>11</sup>. It was generally accepted that VLE use did not imply the removal of face-to-face teaching and learning and the adoption of a distance mode of education, but that it encouraged a rethinking and reformulating of the way teaching was conducted and learning supported, because of the new opportunities offered. This is expressed in the literature as a change in paradigm from delivering information,

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<sup>11</sup> Something also noted by Browne & Jenkins (2003): distance learning did not feature as a reason for VLE use whereas Jenkins et al. reported that 25% of institutional respondents gave it as a reason (2001).

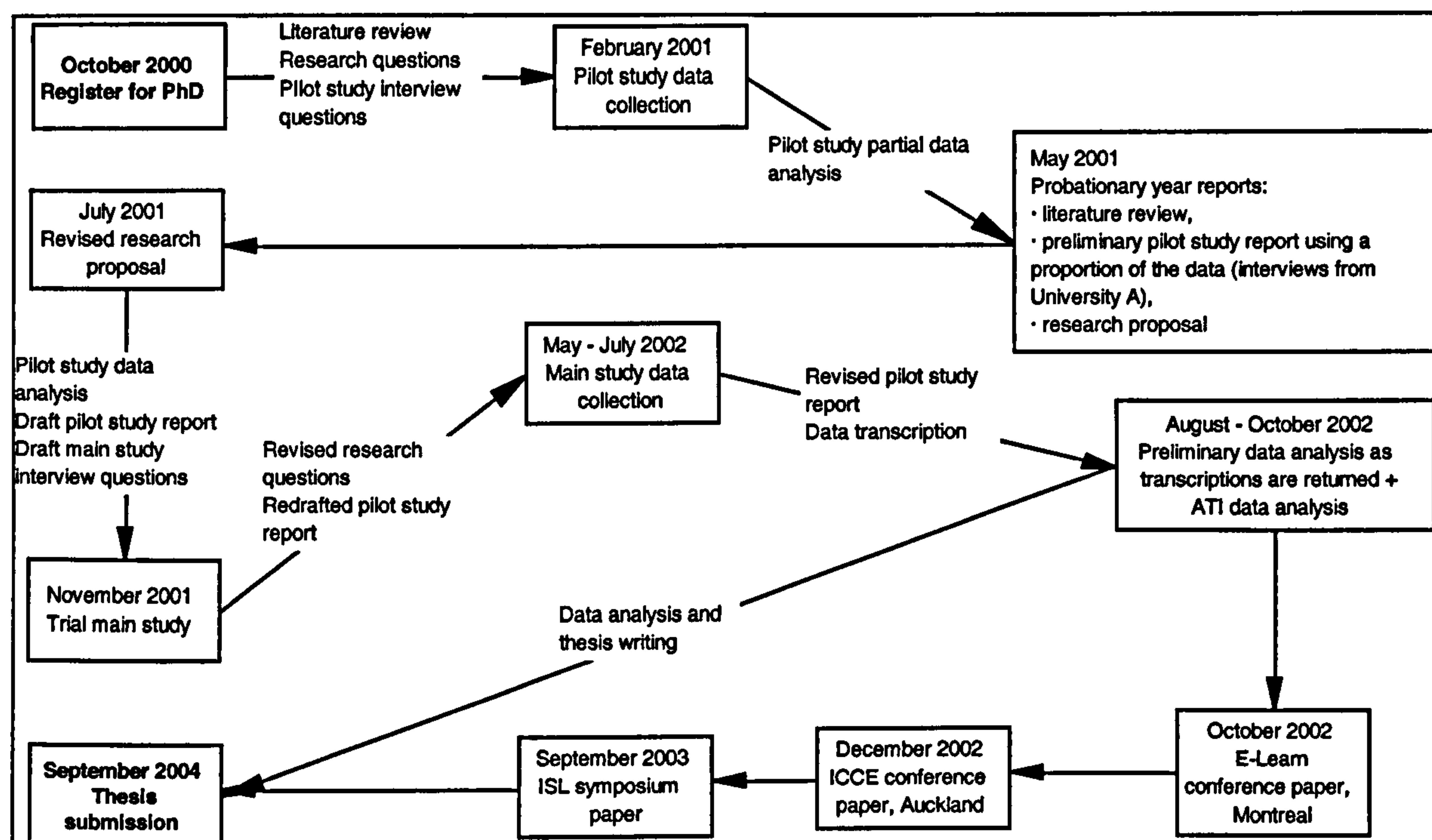
“the sage on the stage”, to the joint construction of knowledge (Barr & Tagg, 1995), where the lecturer values student experience and becomes a facilitator of their learning. The hope implicit in this is that the use of ‘new’ technology would mean the adoption of a student-centred approach, however, as this research will show, having the tools and being able to apply them to facilitate a particular approach are two very different things, affected by many factors.

The following section outlines the thesis structure and provides a short description of the contents of each chapter.

#### ***1.4 Thesis structure***

This research took the form of an interview study which began by being exploratory, asking what is actually happening regarding VLEs in face-to-face higher education.

Following a pilot study the interview questions became more focused in order to explore the reasons lecturers gave for VLE use, one actual example of use and the contextual factors that affected VLE use. These directly related to the final research questions outlined in Section 1.3, above.



**Figure 1.3: Research chronology**

The thesis follows the structure of the research which was conventional in its construction: a literature review to inform the area for research, a pilot or feasibility study to refine and revise the research questions and instruments, a short trial study followed by the main data collection. Figure 1.3 shows the research chronology while the chapter outlines below describe the content of each chapter.

## ***Chapter 2 - Literature review***

This chapter outlines the area for investigation by attempting to answer the following questions:

- What is driving the use of Web and Internet-based technology in Higher Education?
- What other factors may affect the use of Web and Internet-based technology?
- How are Virtual Learning Environments different to generic Web and Internet-based technology?
- What is the perceived link between this technology and pedagogy?



This involved looking at Government policy, perceptions about the purpose of Higher Education and the relationship between approaches to teaching, learning theories and educational technology. The purpose of the chapter was to set the scene for the research. Additional literature was considered and referred to throughout the research process, as it became relevant, and is introduced into the thesis as appropriate.

### ***Chapter 3 - Developing the methods***

Chapter 3 is the first of two methods chapters. It describes the conduct of a pilot study, the aim of which was to find out what was actually happening in Higher Education with respect to the use of VLEs (as distinct from what the literature indicates may be happening) and to inform the design of the main study. The data analysis process is explained in some detail because of the implications that this had for the revision of the interview questions and the refocusing of the research. The chapter concludes by reviewing the feasibility of conducting research into the use of VLEs to support face-to-face teaching and indicating the way in which the research questions and design needed to be revised. Problems encountered in identifying the way interviewees taught led to a decision to use the Approaches to Teaching Inventory (ATI - Prosser & Trigwell, 1999) for the main study.

### ***Chapter 4 – Collecting and analysing the main study data***

Chapter 4 explains the way in which the main data collection was conducted. It begins by explaining the use of the ATI and goes on to review the pilot study findings in order to draw up a list of questions raised and to show how the research questions were revised. The questions raised led to a first redraft of the interview questions that were further revised by way of a short trial study. The institutions and interviewees involved are described. A final section describes the way the data from the trial and main studies was analysed as a prologue to the main data chapters 5 to 7.

## ***Chapter 5 – Reasons for use***

This chapter describes and discusses the reasons interviewees gave for their use of a VLE.

Their reasons were described as motivations and intentions, to distinguish between the original motivations for becoming involved with VLE use and the way they intended to use a VLE. These categories were each further divided into different types of motivation (interest and pressure) and intention (course management and the facilitation of learning).

Analysis showed that most interviewees had a mixture of reasons driving their VLE use and that some of these (included in the facilitation of learning sub-category) could be considered student-centred.

## ***Chapter 6 – Lecturers' needs and concerns***

This chapter describes and discusses the contextual factors that interviewees said supported and hindered their use of a VLE. These were termed lecturers' needs and concerns. Four sets of issues were identified: student, technical, institutional and pedagogic. Analysis of the data demonstrated the complexity and variety of factors affecting the adoption and use of a VLE, even among those who could be characterised as open and willing to innovate and reflect on their practice. It also indicated that some interviewees felt that being able to provide materials within a VLE meant that they could adopt a more active approach in their lectures and replace unproductive seminars with online activities.

## ***Chapter 7 – Using a VLE to support face-to-face teaching***

This chapter uses the interview data and the ATI scores obtained to explore the way in which lecturers said they used a VLE to support teaching and learning in one specific context. The ATI scores were used to identify the approach to teaching adopted by each interviewee (because this may also affect the way a VLE is used). This seemed to indicate that the interviewees were more student- than teacher-focused in approach. The ATI data

was used to select four cases with outlying scores, in relation to the others, to examine whether VLEs were used to facilitate student-centred teaching methods.

### ***Chapter 8 – Discussion and conclusion***

This chapter concludes that despite the promise of Web and Internet-based technology and VLEs in particular, change in higher education is very slow. It reviews the research design and the findings and concludes by suggesting future areas for research. Lecturers taking part in this research have on the whole been enthusiastic, willing to innovate and to reflect on their practice and appear to have a student-focused approach to teaching, as measured by the ATI. Nevertheless they sometimes feel overwhelmed by contextual factors many of which are out of their control.

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## Chapter 2: Setting the scene

The purpose of this chapter is to set the scene for the research, an investigation into the use of Virtual Learning Environments (VLEs) in face-to-face higher education (HE) in the UK. Literature relating to the use of Web and Internet-based technology to support teaching and learning was reviewed. The intention was to verify whether the chosen topic was justifiable, to define the research focus and to inform the research design, the interview questions and the creation of analysis categories. This review concentrates on the state of play at the beginning of the study because “... in qualitative inquiry reviewing the literature is an ongoing process that cannot be completed before data collection and analysis. The data often suggest the need to review previously unexamined literature of both substantive and theoretical nature.” (Glesne & Peshkin, 1992) This was indeed the case: additional literature was consulted as the focus of the study shifted and the data was analysed and is introduced into the thesis as appropriate.

This review explores a number of areas in order to define the research focus. I began by trying to understand what was driving the use of Information and Communications Technology (ICT) in HE and what type of ICT was being promoted. I wanted to understand the type of pressure lecturers<sup>12</sup> were subject to. I found a lot of comment on the post-Dearing era, the complexity of modern life and the sorts of skills students were expected to acquire from their time in HE, as well as a number of educational claims made for the use of Web and Internet-based technology.

The particular ICT that was gaining prominence was that supported by Web and Internet-based technology and manifested as Virtual Learning Environments (VLEs) such as

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<sup>12</sup> The focus of my study, as explained in Chapter 1, p. 3

WebCT and Blackboard. At the beginning of this research a number of small-scale individual studies, based on lecturers reflecting on their own practice of using Web-based materials, had been published as well as some institutional evaluations of the implementation of learning technologies (Bull & Zakrzewski, 1997), the integration of ICT into the curriculum (Watson, 1997) or of VLE adoption (Deepwell & Syson, 1999; Lee & Thompson, 1999) in the UK context. However, there was nothing examining and comparing VLE use across institutions<sup>13</sup>. There were also a number of cautionary articles pointing out that the most important element affecting the use of multimedia and educational technology was careful planning (for example Davies & Crowther, 1995 ; Kearsley, 1998).

The general consensus seemed to be that the application of Web and Internet-based technology to education was a good thing. It was argued that these technologies would enable teachers to create student-centred learning environments that would be more effective in supporting students in their learning. This review set out to examine that assertion by seeking to understand why student-centred learning was thought to be an important “new” paradigm in HE which Web and Internet-based technology could facilitate and what writers meant by student-centred learning.

Therefore this review sought to answer the following questions:

- What is driving the use of Web and Internet-based technology in Higher Education?
- What other factors may affect the use of Web and Internet-based technology?
- How are Virtual Learning Environments different to generic Web and Internet-based technology?

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<sup>13</sup> Since then there have been two surveys reported by UCISA (Browne & Jenkins, 2003; Jenkins et al., 2001) indicating increased use of VLEs.



- What is the perceived link between this technology and pedagogy?

I began by examining the impact of Government policy and perceptions about the purpose of higher education.

## ***2.1 Drivers for the use of ICT in Higher Education***

It seemed that there were a number of possible reasons why lecturers might feel they were obliged to adopt information and communications technology (ICT). Some were to do with Government policy, others to do with changes in society and the workplace. The one unifying factor seemed to be the perception that the use of ICT would have positive benefits. The Report of the National Committee of Inquiry into Higher Education (NCIHE), more often referred to as “The Dearing Report”, saw the “innovative” use of ICT<sup>14</sup> as a way to improve “... the quality, flexibility and effectiveness of higher education ...” (1997, pt. 13.1).

One the implications of this view was that ICT could help HE cope with the change in pedagogic relationships (between students and lecturers) resulting from increasing student numbers (Light, Nesbitt, Light, & Burns, 2000). Following increases throughout the 1980s and 1990s (DfEE, 2000; NCIHE, 1997) the NCIHE expected that the number of “entrants to full-time first degrees and sub-degree programmes” would rise to 45 percent of 18 to 19 year olds in the population, by 2017 (NCIHE, 1997, pt. 6.39).

The use of ICT in HE is often portrayed as a way to overcome difficulties posed by an increase in student numbers unmatched by an increase in funding (Daniel, 1996; Farrell,

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<sup>14</sup> NCIHE called ICT Communications and Information Technology (C&IT), but for the sake of uniformity I will use the acronym ICT throughout this thesis.

1999; Harry, 1999; Jurich, 2000; Laurillard, 2000; NCIHE, 1997). It can be viewed as a cost-effective way of increasing provision with technology perceived as cheaper than teachers and the emphasis being placed on economies of scale, with little regard being paid to the cost of planning or preparation:

“The delivery cost to students online is 50 - 60% of an ordinary course, because you save on rooms, and the content is built into the course; you provide support but not expensive teaching ...” (Davies, 2002).

Critics argue that expenditure on technology (rather than more staff and bricks and mortar) is seen as a way to expand on the cheap, with little thought to the effect on teaching and learning (Press & Washburn, 2001). Moreover the myth of cheapness has been challenged in a number of places, not least by the writers who point out that the use of online learning environments increases the amount of staff time required to monitor, moderate and mediate (Goodfellow, 2000; Ruth, 1997). Claims of cost cutting also ignore up-front development costs (Davies & Crowther, 1995; Green & Gilbert, 1995) and “can be used to avoid confronting decreasing staff-student contact time and regularise solitary learning” (Fraser, 1997, p. 3). A HEFCE survey “... found no HE institutions which explicitly intend to use [ICT] as a means of reducing expenditure, although some hope (rather than expect) that this may be the case in the long term.” (1999)

The move towards a mass education system, expressed as “widening participation” and “life-long learning”, is now part of Government policy and is the focus of the 2004 Higher Education Bill. It reflects the belief that an educated workforce is important for the economic health of a nation (Laurillard, 2000; Martin, 1999; Watson & Taylor, 1998) and that in order to remain employable people will need to update their skills and knowledge throughout life (Jurich, 2000). It is argued that online learning, using Web and Internet-based technology, can be tailored to meet the needs of the different profiles of today’s



students who will need more than the cumulative, finite years of study leading to a degree. They will need personalised, applied learning throughout their lives (Guiton, 1999), lifelong learning.

However, this could lead to an emphasis on the need to prepare students for life after university, for the workplace. This ‘vocationalist’ view of higher education holds that higher education is preparing graduates for work in the wider world and so should provide them with generic competencies. These competencies are often referred to as ‘transferable’, ‘core’ or ‘key’ skills (Barnett, 1997; NCIHE, 1997) and include literacy, communication, foreign language, leadership, team-working and information technology (IT) skills. Therefore the use of ICT can be seen as a way to provide students with the necessary skills for employment (Barnett, 1997; Laurillard, 2000; Martin & Fayter, 1997; Säljö, 1998).

The perceived need for vocational input has already resulted in the inclusion of work-based elements in courses and the use of different pedagogical strategies such as teamwork, presentations and project work based on case studies. This can be related to the idea of cognitive apprenticeship expostulated by Brown, Collins and Duguid:

“Cognitive apprenticeship supports learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity. [...] Learning, both outside and inside school, advances through collaborative social interaction and the social construction of knowledge.” (1989, p. 39-40)

NCIHE noted that employers were more interested in “... the skills and attributes of the individual, as developed by their higher education studies” (1997, pt. 6.48) than the subject studied when questioned. The skills identified include the ‘transferable skills’ listed above together with “... project management and entrepreneurship” (Laurillard, 2000, p. 144).

Some people writing in this area argue that the world in which we work is too complex to rely on these transferable skills alone. They argue that higher education should also equip students with the critical abilities to make them more flexible and adaptable members of the workforce, able to cope with economic and technological change and “to evaluate critically the way knowledge is being generated and used” (Laurillard, 2000, p. 140). As Säljö points out “Technological, economic and social development have resulted in more sophisticated work processes that require a broad range of skills of a technical as well as interpersonal nature” (1998, p. 144). This ‘critical’ view of higher education believes students should be given “... the capacity to go on interrogating one’s taken-for-granted universe” (Barnett, 1997, p. 23) to enable them to cope with this ever changing world.

Student-centred teaching methods are advocated as a way of teaching the skills students need to survive in today’s complex world. “Teacher-led approaches do not foster the ability to learn outside the classroom” (Thorpe, 2000, p. 176). It is recognised that students need to

“... learn how to learn for themselves since, because of rapid change, detailed information tends to date rapidly. The skill to evaluate new products, to develop and evaluate new methods, to assess their own work and to identify what was wrong and why, both technically and organisationally, are essential” (CNAA, 1992, paragraph 6.1.3).

A third “traditionalist” view of the purpose of HE states that “the acquisition of knowledge and understanding is intrinsically good and justifiable. ... The main kind of learning outcome associated with this conception is the ability to recall declarative conceptual knowledge and deploy it in the construction of arguments, or in the solution of problems more generally” (Goodyear, 1998, p. 7-8).



These views form part of the overall purpose of HE and are echoed in the four main purposes of HE described by NCIHE:

- “to inspire and enable individuals to develop their capabilities to the highest potential levels throughout life, so that they grow intellectually, are well-equipped for work, can contribute effectively to society and achieve personal fulfilment;
- to increase knowledge and understanding for their own sake and to foster their application to the benefit of the economy and society;
- to serve the needs of an adaptable, sustainable, knowledge-based economy at local, regional and national levels;
- to play a major role in shaping a democratic, civilised, inclusive society” (NCIHE, 1997, pt. 5.11).

It is worth examining these competing views of higher education. They indicate why lecturers might feel a need to provide the opportunity to use ICT and could influence the way in which technology is understood or used by lecturers: as a tool to support different approaches to teaching and learning or as a skill to be learnt. That is, bolted on to current practice or embedded in teaching and learning. Although it is never quite an either / or situation, use has more often focused on the technology rather than the way it is used. This was something NCIHE had concerns about, noting that ICT was not “embedded in the day-to-day practice of teaching and learning in most higher education institutions” (NCIHE, 1997, pt. 3.61). It is also a concern expressed in the literature: there is a strand that laments the lack of pedagogy in online environments (Firdyiwek, 1999) and urges teachers to think carefully about the application of technology to education (Kearsley, 1998; Spitzer, 1998; Willis, 1998).



According to Lawhead et al. "Web-based learning is a complex and costly process that involves far more than the transfer of faculty notes onto Web pages" (1997, p.28). It should not just be concerned with the repackaging of existing materials, but practitioners should seek to answer a number of questions before deciding on the transfer to web-based learning:

- Is it appropriate to the context?
- What equipment is needed? Do not become bogged down by the novelty aspect.
- What effort is required? Do not underestimate the amount of time it will take to prepare.

Another pressure encouraging the use of Web and Internet-based technology in HE was a growing acceptance (and, by association, expectation) of use by the general population. This was fuelled by a general growth in computer ownership and Internet usage (Keegan, 2000; Matheson & Summerfield, 2001) and increasing use of personal computers both at home and work (Ely, 1999; Everhart, 2001; Goodyear, 1998; Green & Gilbert, 1995).

Academics' use of computer-based learning in their courses is said to have increased from over a quarter of courses in 1992 (Laurillard, Swift, & Darby, 1993) to approximately 55 percent in 1997 (Casey, 1997). However, this did not indicate how much of a course used computer-based or -supported learning (CBL or CSL) or how effective this was. Casey (1997) argues that much of the original drive towards the use of "new" technology<sup>15</sup> came from the fact that it was available, so it was used. The same criticism can be made of

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<sup>15</sup> "New" technologies are defined listed as: "videos, multi-media/computer assisted learning, and, to a lesser extent, distance learning" (Casey, 1997, pt 2.17), the last presumably supported by computer use.

statistics used to indicate the growth in VLE use; they say nothing about the effectiveness of this use.

Thirty percent of the academics replying to Casey's (1997, Table 2.10) questionnaire reported that the availability of "new" technology had caused them to review their teaching methods. "The most frequently mentioned reasons for the change in [teaching] methods were the availability of new technologies, increased student numbers, and resource constraints" (Casey, 1997, pt. 2.17). Twenty-one percent replied that they had changed teaching methods for the benefit of their students.

Interestingly, a more recent survey reported the reasons for "moving to or considering VLE use" (Jenkins et al., 2001), depended on who was asked. Senior managers gave "enhancing teaching and learning" as the main reason, 43% of those responding, but users and those supporting users said their main reason was "flexibility", 49% of those responding. Only 19% of users or those supporting users said "enhancing teaching and learning" was their main reason for using a VLE.

There did however seem to be a widespread perception that Web and Internet-based technology could help improve teaching and learning in an institution (for example, O'Donoghue et al., 2000). What was less clear was what effect the adoption of this technology actually had on teaching and learning: how much the use of technology actually contributed to students' learning experience and whether practitioners had reviewed, or even thought about, the pedagogy used, as suggested above. Also unclear was whether teaching and learning has changed in response to innovative technology use and reflection on practice.



The pedagogy of some subjects and lecturers had already changed to accommodate the acquiring of new skills (teamwork, presentations and project work) by students and it is to be expected that lecturers will attempt to harness the Web and Internet-based technology available to them. After all teachers at all levels have been using technology to support learning and improve their teaching for many years: from the tape recorder and the overhead projector to the computer. It was not clear though what was the main driver for the use of ICT. I wanted to explore two possible reasons: use to help lecturers cope with the change taking place in Higher Education and use to help facilitate a change in the teaching and learning environment. First I had to identify and define the type of technology to be investigated and the role it is envisaged it will play.

## ***2.2 Web and Internet-based technology used in Higher Education***

For NCIHE, ICT meant “those technologies which enable the processing, storage and transmission of both live and recorded information by electronic means” (NCIHE, 1997, Chapter references). This research is concerned with more recent manifestations of the technology: those that exploit the interconnectivity of the Internet, the protocol and languages of the World Wide Web and the use of multimedia personal computers. NCIHE made reference to the availability of some of this technology, noting the existence of SuperJANET, “the most advanced academic information technology network in the world” (NCIHE, 1997, pt. 13.24).

The Web and Internet-based technologies discussed in the literature range from synchronous and asynchronous collaboration tools to the so-called ‘hypertechnologies’ (Rowe, 1997) of Hypertext Markup Language (HTML) and Virtual Reality Markup Language (VRML) that facilitate the creation of more interactive, less static, documents. Chat, audio and video conferencing and using a shared whiteboard are examples of



synchronous tools, where activity takes place in real time. Examples of asynchronous tools are e-mail, threaded discussions and bulletin boards, notice boards and document sharing. They facilitate activities that take place over time, at the convenience of the user.

For the purposes of this research the application of Web and Internet-based technologies to education are conceptualised as happening in two distinct ways. Sometimes the synchronous and asynchronous tools are packaged together in what are termed Virtual Learning Environments (VLEs) or Managed Learning Environments (MLEs). Some of the literature calls these packages “courseware” systems and argues that at a minimum they should “consist of efficiently integrated synchronous and asynchronous communication tools, [and] an autonomous Web authoring and presentation environment” (Firdyiwek, 1999, p.29). The other application is the use of generic technologies (such as off-the-shelf software tools and public domain languages). These are adapted and tailored to solve a specific problem (through the creation of computer assisted learning packages and simulation software, for example) or used to create Web pages and as stand alone communication tools (usually e-mail systems).

When this research began there was no universal definition of either a learning environment or a VLE. A broad definition was constructed with reference to the literature (Britain & Liber, 1999; Firdyiwek, 1999; Pimentel, 1999; Stiles, 2000) and later adapted to emphasise the idea of an integrated system and the possibility of collaboration and student contributions to content (see p. 2). A VLE is accessed via a Web browser which means it is accessible anytime, anyplace anywhere (given the availability of the necessary equipment and a functioning Internet connection). Another feature of VLEs is that access is restricted (via user identities and passwords) to those registered at a given institution or on the course selected.

VLEs are sometimes called Managed Learning Environments (MLEs) although Stiles (2000), writing about the Staffordshire University MLE, COSE, makes a distinction between the two. He states that an MLE

“... includes all of the wider features of enrolment, course options management, student record and profile keeping, the wider management, interchange and publication of content, and the features needed to allow learners to move or progress between courses and institutions ...” (Stiles, 2000).

This inclusion of student administration and management of learning materials is also a definition favoured by BECTa (JISC, 2000). As time went on the distinction between MLEs and VLEs became clearer and this is explained further in a JISC briefing paper (JISC, 2002a). This research is primarily concerned with the use of VLEs, I found no examples of fully integrated MLEs, one reason given was that institutions were nervous about integrating their management information system with a learning environment that students had access to. There were also problems associated with the interface between student record systems and the VLE system that hindered use.

There are a number of VLEs being used in the United Kingdom (Browne & Jenkins, 2003; Jenkins et al., 2001). The two main commercial packages are WebCT (used by Coventry University, amongst others) and Blackboard<sup>16</sup>. Some have been developed in-house by teams working at the Universities of Staffordshire (COSE), Wolverhampton (WOLF, now

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<sup>16</sup> See the WebCT and Blackboard sites for more information about HEI users:

[http://www.webct.com/uk\\_ireland](http://www.webct.com/uk_ireland) and

<http://www.blackboard.com/worldwide/gb/en/index.htm>

available commercially as Granada Learnwise and used more widely in the Further Education sector) and Huddersfield (coMentor). These environments are being used to support the 'conventional' or face-to-face teaching that takes place within the institutions that is they are not intended, in the first instance, as distance education tools. The claim is that these VLEs are designed to facilitate active and collaborative learning (Stiles, 2000; University of Huddersfield, 2001) and to enable students to study at their own pace and in their own time (University of Wolverhampton, 2001).

Staffordshire, Wolverhampton, Coventry and Huddersfield are all ex-Polytechnics or 'new' Universities; they were granted university charters in the 1992 reorganisation of Higher Education. These post-1992 universities have been at the forefront of the increase in student numbers and in widening access to higher education. If it is believed that technology helps universities to cope with this expansion this may explain their desire to develop and utilise these environments. The stated intentions, given above, also suggest a desire to support non-didactic teaching methods and flexible access.

Web and Internet-based technologies can be used to support and facilitate communication, collaboration and interaction and to create information rich environments. An information rich environment is an environment that uses many sources to inform its content.

Hypertext enables the production of an information rich environment by linking documents: reference can be made within one document to another information source, which can be viewed by 'clicking' on an HTML coded link. In addition the interconnectivity of the Internet also makes it possible to gain access to a wider variety of materials by employing search engines to search online databases.



Prior to the use of Web and Internet-based technologies much of the educational use of computers was in providing one-to-one training (one student in front of a computer interacting with the computer, constructing documents, or with the content, doing drill exercises). The possibilities presented by developments in hardware and software meant that computer models could be used for the simulation of events and processes and the visualisation of complex phenomena. It has also become easier to produce multiple representations and new forms of interactivity between the learner and what is to be learned, the learner and their peers and the learners and the teacher.

The combination of computer mediated communication (CMC), multimedia and electronic networks has facilitated a move away from the computer as artificial (or replacement) teacher typified by Skinner's work (1958, reprinted 1996). Instead it has become the platform for a set of tools that can be used by teachers and learners to facilitate the task of learning and understanding, what Bates (1995) calls a 'true' technology. More recent examples of this use would be the creation of virtual reality environments to enable students to experience an environment that would not be possible otherwise (Whitelock, Romano, Jelfs, & Brna, 2000). Also the use of Object Oriented Multi User Dimension (MOOs) software to facilitate role-play as an aid to understanding (Gibbs, 1999).

The use of Web and Internet-based technology to support teaching and learning has created debate about the blurring of the lines between distance and 'conventional' education (Tait, 1997; Westera, 1999). It is thought this will come about because the use of technology will mean less contact time and lead to a mimicking of the mode of distance education. Although according to Harasim this is only one of three modes of online teaching and learning:

“Adjunct mode, uses networking to enhance traditional face-to-face or distance education,

Mixed mode, employs networking as a significant portion of a traditional classroom or distance course, and

Totally online mode, relies on networking as the primary teaching medium for an entire course or program.” (2000, p.46)

Also there is evidence to suggest the complete removal of real (as opposed to virtual) campuses will not happen, particularly as it has been shown that the social aspects of higher education are extremely important and that students suffer if isolated (Fungaroli, 2000).

The need for social interaction is one of the reasons distance learning has been so keen to use CMC in its teaching (Westera, 1999) to engender the collaboration and sense of community which can be fostered by face-to-face contact. According to Bates “once learning moves beyond the recall of facts, principles or correct procedures, and into the area of creativity, problem-solving, analysis or evaluation, learners need inter-personal communications, the opportunity to question, challenge and discuss” (1995, p. 233).

Teaching and learning using the Web and Internet-based technologies is sometimes referred to as online learning (Harasim, 1989), ‘anytime, anyplace, anywhere’ learning. NCIHE foresaw ICT helping to overcome “physical and temporal obstacles to access for students” (NCIHE, 1997, pt. 13.4) and looked forward to a world where students would travel to their place of learning by using a computer rather than their feet, their car or public transport. Online learning is referred to as a way to provide flexible learning, although it is also characterised by the physical separation of learners and teachers, and in some cases is resisted by lecturers because they believe it means a move towards distance education for everyone and they do not feel comfortable with this (Moron-Garcia, 2000).



Students and lecturers have expressed a preference for face-to-face contact. “Ongoing physical and even emotional interaction between teacher and students, and among students themselves” is considered to be “an integral part of a university education” (University of Illinois, 1999). Furthermore lecturers have also expressed concerns about the motivational aspects of teaching in this way (Moron-Garcia, 2000), although Mason (1999) has shown that the integration of technology use into the assessment strategy of a course can encourage technology use.

Moreover it is unlikely that the use of technology will remove the need for lecturers, by diminishing their role, as feared by some. A study carried out by the University of Illinois found that high quality online teaching is time- and labour-intensive (University of Illinois, 1999). Davies and Crowther (1995), among others (see also Barr & Tagg, 1995; Ehrmann, 1995b), argue that the use of multimedia cannot replace the lecturer, rather it can and should change the lecturer’s role in the learning process. Lecturers have found that students often need more support if working in an online environment, whether this is by electronic means (email or conferencing) (Goodfellow, 2000) or face-to-face (by increasing office hours) (Ruth, 1997).

These arguments seem to imply that one of the consequences of technology adoption will be an increased workload for lecturers. However, this technology is powerful in its potential ability to support and perhaps replace the sort of collaboration and communication that traditionally takes place face-to-face in ‘conventional’ education. It also enables the storage of large amounts of data and affords the possibility to access much more, facilitating the creation of rich environments for active learning (Grabinger & Dunlap, 1995). Interfaces to student records aid record keeping and can control access to



the materials. So maybe use is more about changing the way lecturers work and by implication teach.

The answer may be to give the students more control over and responsibility for their own learning, a pedagogic model which this technology can be used to facilitate and support (Collis, 1996; Westera, 1999). This would involve a change from the traditional model of teaching and learning found on many campuses. Away from a reliance on the lecturer for direction and the transmission of information, to students actively discovering information in the pursuit of the solution to a problem or question posed by the lecturer. A move to a more student-centred and constructivist approach where students are

“ ... engaged in a continuous collaborative process of building and shaping understanding as a natural consequence of their experiences and interactions within learning environments that reflect the world around them ...”

(Grabinger & Dunlap, 1995, p. 5).

The following section explores the discussions around pedagogy and the use of technology.

### ***2.3 The link between technology and pedagogy***

The move towards the ‘mass education system’, described above, has resulted in a change in pedagogical relationships. The ratio of students to lecturer has increased as lecturers are faced with larger numbers of students, who are also from more varied backgrounds.

Commentators such as Barnett (1997) maintain that this change in pedagogical relationships leads, by default, to students having to take more responsibility for their own learning which is then labelled student-centred learning. He also asserts that much of the change in pedagogic strategies has been of an ad hoc nature, in response to this change, rather than being informed by literature on student learning (Barnett, 1997).

Other commentators (Barr & Tagg, 1995) recommend that a more organised change in pedagogy is needed if institutions wish to find a way to continue providing quality education. This is described as a change in paradigm from teaching (described as the passive absorption of information, typified by the traditional ‘stand and deliver’ lecture) to learning (described as the active discovery and creation of knowledge). O'Donoghue et al. write about “the need to create a shift away from the ‘transmission’ model of lecture-based courses to one where students take greater responsibility for their learning, i.e. independent, self-directed learning” (2000, p.2).

This has consequences for the role of the teacher or lecturer who is no longer the ‘sage on a stage’, but becomes a facilitator of student learning and gives rise to a more student-centred model of education. Johannasen and Eide agree that “the future challenge in Higher Education is ... to focus on the learning process and what the teacher can do to enhance this” (Johannasen & Eide, 2000, p.4). Although O'Donoghue et al note that “... increasingly, lecturers are deploying student-centred activities that encourage them to reflect on the lecture content and provide the opportunity to refresh their concentration” (2000), so maybe the transition is already happening.

Collis (1996) believes that the use of Web and Internet-based technology has the potential to allow a resource-based and student-centred approach to learning to be incorporated into teaching. Westera (1999) claims that the use of this technology will cause the lecturer to adopt the facilitator role needed in the student-centred model of education:

“... student-centred learning incorporates negotiation by the learner of how learning proceeds and perhaps also the content of what is to be learned. ... Student-centred teaching ... sets out to start from where the learner is at rather than from the dictates of a prescribed curriculum” (Thorpe, 2000, p.176).



Wegner et al found that Internet-based instruction “accentuates the student as worker and teacher as coach paradigms” (Wegner et al., 1999, p.6). The “instructor’s”<sup>17</sup> role becomes one of preparing the “instructional environment”, anticipating the needs of students in advance and providing contingencies. The “instructors” respond to and accommodate learners by assisting them to develop their own meaning for material rather than interpreting it for them.

There was concern though that the desire to provide student-centred learning could lead to unsupported and “solitary learning” (Fraser, 1997), a belief that students should just go away and find out something. It is recognised that students need support in taking responsibility for their own learning (Laurillard, 1993). Writers such as Jackson (1998) maintain that although higher education institutions claim to aim to provide a more learner-focused environment for students (in that the learner is encouraged to take more responsibility for her or his learning), in the application of technology to learning they are “objectivist”. That is they adopt a transmission approach. It could be argued that this approach is widespread, as according to Entwistle learning outcomes are measured in terms of understanding, where the “students’ explanations of their own personal understanding have to match” (1998, p.7) the target understanding.

Writers such as Alexander (1995) and Jackson (1998) contrast this teacher-focused, transmission-oriented, “objectivist” approach with a “constructivist” approach, generally

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<sup>17</sup> The vocabulary used when discussing teaching and learning can give a false impression: the use of instructor gives the impression of a transmission approach, however this is the term used to denote lecturer or teacher in some literature, particularly the U.S.A.; pedagogy is also considered a loaded term in some quarters, with its implications of direction and didacticism, however in the context of this research it is used to mean teaching.



agreed to be more learner-focused. Constructivism is “a collection of theories and ideas about different issues in pedagogy that are informed by a range of philosophical / epistemological outlooks” (Reibel, 1994, p.1). Biggs says that there are different schools of constructivism but states that “a consensus would be that learners arrive at meaning by actively selecting, and cumulatively constructing, their own knowledge, through both individual and social activity” (1996, p.348).

Dewey and Ausubel are two of the many theorists, in various disciplines (education, psychology, philosophy and the history of science) who are influential in constructivist theories of learning. Dewey pointed out the importance of experience in learning – we learn from experience (Morphew, 2000; Ross & Scanlon, 1995) and experience helps us to construct our own representation of knowledge (Dalgarno, 2001). Ausubel wrote “the most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly.” (Ausubel, Novak, & Hanesian, 1978, p. 163). The importance of learning through social interaction and collaboration is attributed to Vygotsky (Dalgarno, 2001; Jones, 1995). These ideas about the active creation of knowledge and the need to reflect on or review what is already known and what is learnt, to see how and whether it fits with existing knowledge structures, are consistent with Piaget’s epistemological beliefs (Dalgarno, 2001; Jones, 1995; Piaget, 1991). While the construction of personal knowledge is consistent with Dewey’s ideas, as expressed above: “Meaning is created by the learner, not simply received” (Jackson, 1998). An additional element of constructivism is that “learning takes place embedded in the contexts to which it is most relevant in everyday life and with which the students are personally involved” (Knuth & Cunningham, 1993, p. 164). This element has similarities with the situated cognition ideas of Brown *et. al.* (1989).

Constructivist theories of learning are important to this discussion because they are influential in the field of instructional design and development. Many writers also use constructivism to inform their discussions about higher education and the use of Web and Internet-based technologies (Bostock, 1998; Grabinger & Dunlap, 1995; Hewson & Hughes, 1999; Morphew, 2000; Westera, 1999). Jonassen et al. argue that there is a need for a constructivist approach to instructional design in Higher Education: “modern technology can and should support advanced knowledge acquisition. It can best do that by providing environments and thinking tools that engage constructivistic conceptions of learning” (Jonassen, Mayes, & McAleese, 1993, p.236). Wilson defines a constructivist learning environment as:

“... a place where learners may work together and support each other as they use a variety of tools and information resources in their guided pursuit of learning goals and problem-solving activities” (B. G. Wilson, 1996, p.5).

He goes on to write about the value of what he terms “open, virtual environments” which allow “interactions and encounters with other participants, resources and representations. [...] Students [...] interact primarily with other networked participants and with widely disseminated information tools” (*op. cit.*, 1996, p.8).

This type of environment sounds very much like the sort of environment that can be supported by Web and Internet-based technology. Virtual Learning Environments, in their packaging of this technology, are attempting to provide an off-the-shelf solution for practitioners in Higher Education. The extent to which they “support the constructivist nature of learning is a function of (1) the affordances for knowledge construction they provide [...] and (2) how they are employed by both teachers and learners in the learning environment” (Knuth & Cunningham, 1993, p. 177). These points once again raise questions about the teaching methods that are supported by the Virtual Learning Environments employed and the conceptions of teaching held by lecturers, which will



affect their use of the environment: Can these systems support student-centred learning?

How does the functionality of the system affect lecturers?

To begin addressing these questions a framework was needed to aid the identification of student-centred methods. Honebein (1996), an instructional systems consultant, refers to the work of Knuth and Cunningham (1993) in listing seven pedagogical goals of a constructivist learning environment:

1. To provide experience with the knowledge construction process (Student-directed learning, they decide what topics or subtopics to pursue, the methods used to learn and the strategies to solve problems. Lecturers facilitate);
2. To provide experience in and appreciation for multiple perspectives (Students evaluate alternative approaches and solutions to problems);
3. To embed learning in realistic and relevant contexts (Activities are situated in authentic contexts);
4. To encourage ownership and voice in the learning process (Students identify their own issues and directions, goals and objectives. Lecturers act as consultants in helping to define the learning objectives);
5. To embed learning in social experience (The use of peer and student-teacher collaboration, discussion and debate);
6. To encourage the use of multiple modes of representation (The adoption of multiple media, for example, video, audio, printed text, computer, to provide richer experiences);
7. To encourage self-awareness of the process of knowledge construction (The use of reflection).



Honebein's seven goals can be contrasted with the characteristics of constructivist environments detailed by Jonassen et al. (1993). These open learning environments should:

- be case-based and situated in the realities of the external world;
- require learners to access prior knowledge and to assemble more elaborate schemata from it;
- require learners to interact with the complexities of the external world and interact with other learners in a process of social negotiation;
- require learners to reflect on the quality of the theories used and decisions made and the skills and processes used to arrive at those decisions.

The above goals and characteristics were later used to draw up a constructivist framework to help with data analysis; the use of this framework is discussed in more detail in Chapter 3. Some may find this approach problematic: Bostock argues that some students will find constructivist learning uncomfortable and “a radically constructivist course would be more difficult to implement within the constraints of large numbers, resources and institutional culture” (1998, p. 236) while Biggs warns against a “naïve constructivism which confuses a theory of learning with a way of classifying teaching methods (“group work leads to constructive learning, but lecturing only involves transmission”)” (1996, p. 348).

However, Honebein (1996) calls his goals a framework, acknowledging that the need to translate them into activities will involve some creativity. The following section looks at the perceived role for technology in enhancing teaching and learning.

## ***2.4 The role of technology in enhancing teaching and learning***

Technology is seen as having the potential to improve student learning (Laurillard, 1993).

Kearsley and Shneiderman (1998) write about engagement theory that has some elements

in common with constructivism and was formulated through reference to their own experiences in the electronic and distance delivery of education. “The fundamental idea underlying engagement theory is that students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks” (Kearsley & Schneiderman, 1998, p. 20). It emphasises meaningful learning, collaboration among peers, the value of creating a community of learners and focuses on experiential and self-directed learning. They believe that technology has an important role to play in facilitating engagement, something that is difficult to achieve in other ways.

According to Harrison “There is real evidence that more independent study, flexibility of pace and place, and the appropriate use of technology can produce better results and enhance the transferability of intellectual and personal skills that is sought by employers” (Harrison, 1994, p. 31). IT skills are seen as being able to enhance study effectiveness and the ability to participate in subject activities (Martin & Fayter, 1997). Claims are also made that the new collaborative tools and new media actually afford a better learning experience for students (Gibbs, 1999), aiding understanding (Pimentel, 1999) and facilitating the sharing of knowledge (Harasim, 1989).

Researchers observed that there appeared to be no negative effect on student achievement or their perception of their learning (for example Gibbs, 1999; Wegner et al., 1999). While Wilson and Whitelock (1997) found that students perceived the online materials and facilities were beneficial to their learning and showed great interest in the extra online materials. Pimentel (1999) reported that students (working with a VLE under instructor supervision) found the visualisation and stimulation provided did help their understanding of the subject matter. What is interesting is that although the contexts of use of the Web

and Internet-based technologies are different student perceptions of the usefulness of the learning environments created are similar.

Evidence of an overall improvement in learning outcomes is less easy to come by.

Possible reasons for this may be that too little thought is given to structuring the learning around predefined outcomes and that the assessments still presuppose traditional learning methods (see Biggs & Tang, 1998). It may be because the technology is used to replicate current modes of delivery online, as typified by the uploading of lecture notes, so that nothing actually changes in the method of teaching. Ehrmann (1995a) argues that using technology to improve learning outcomes involves thinking about educational strategies (pedagogy) that take advantage of the tasks technology is good at (its affordances).

There is also a need for greater thought about the evaluation of the technology used.

“Systematic evaluation of computer supported learning (CSL) is crucial to the achievement of educational effectiveness and academic credibility” (Gunn, 1999). Furthermore, some thought around the aims and objectives of technology use would determine whether a change in outcomes had been intended. The educational experiences facilitated by technology may be different to those not using technology. This will enable different outcomes to be achieved, which in turn will necessitate a different form of measurement.

Some of the literature validates the use of technology with statements such as ‘the students enjoyed the experience’, but this is not related to a change in pedagogy or learning effectiveness, even though these may have taken place. Nor is it explained why this value judgement is thought to be important, although enjoyment of the experience has implications for motivation.



The use of new technology is presented as a chance to reflect on and improve practice (O'Donoghue et al., 2000). Lecturers in Higher Education are encouraged to become reflective practitioners (Beaty, 2000; Race, 2000) who review and evaluate practice to improve the learning experience for students. Ehrmann criticises those who advocate technology use to improve current teaching, arguing that “they fail to ask whether traditional education has been teaching the right content” (1995a, p.2) or to question its objectives. However, lecturers responding to Casey’s (1997) questionnaire indicated that the availability of ‘new’ technology had caused them to reflect on and change teaching methods.

There are a number of books claiming to give pedagogic guidelines for the use of these technologies (for example, Haughey & Anderson, 1998; Heinich, Molenda, Russell, & Smaldino, 1999; Maier, Barnett, Warren, & Brunner, 1998; Newby, Stepich, Lehman, & Russell, 2000). There are also many Web resources (Ellis, 1999; Paulsen, 1997).

Instructors are urged to think carefully about the application of technology to teaching and learning (Kearsley, 1998; Spitzer, 1998; Willis, 1998) and pedagogy is identified as being more important than the type of technology used; according to Joy and Garcia “learning effectiveness is a function of effective pedagogical practices” (2000, p. 33).

However, pedagogy may not be driving the use of the technology. Casey pointed out that “teaching staff, particularly in the ‘pre-1992’ universities, have traditionally been ... appointed, not so much for their pedagogical qualities but because of their excellence and actual, or potential, research contribution” (Casey, 1997, pt. 2.12). Furthermore Entwistle (1998) argues that academics are not trained to understand how teaching approaches affect student learning and that excellent practitioners may not be aware of their pedagogy. With the move towards mandatory training for all new tertiary lecturers it will be interesting to

see what role technology plays in this training and whether the training will have any affect on the usage of technology.

It would appear, from the piecemeal approach to technology use in Higher Education, that lecturers still find it difficult to employ technology. There are few examples of sustained and widespread use (Goodyear, 1998), unless we look to distance education, despite evidence of investment in the development of educational technology by initiatives such as the Teaching and Learning Technology Programme (TLTP). The TLTP had a remit to “make teaching and learning more productive and efficient by harnessing modern technology” (Haywood et al., 1999) and funded computer assisted learning projects in the UK at institutional and consortium level. A number of approaches were taken, from the adaptation of generic technologies to create computer assisted learning packages, to the creation of Virtual Learning Environments (VLEs). Haywood et al. reported that although there were “more TLTP materials ... in use in the HE sector than may be generally recognised [...] significant barriers to wider uptake of [ICT] into learning and teaching still exist.” (1999) Two that they highlighted were “... the need for pedagogical support...” and “... lack of recognition and rewards for innovation ...”. It remains to be seen whether the reported increase in VLE use (Browne & Jenkins, 2003; Jenkins et al., 2001) will continue and accrue the expected benefits.

Some of the literature (for example, Firdyiwek, 1999) laments the lack of pedagogy in learning environments that have been created to serve education, citing the plethora of available tools which cause confusion and uncertainty. Pimentel (1999) reported on the development of a VLE based on experiential learning and showed how different subjects necessitated the setting up of different sorts of environments. The argument goes that the way in which a VLE has been developed and its underlying ethos will affect the pedagogy



adopted. If the learning environment design is based on a teacher-centred, content-oriented, transmission of information pedagogic model, then that is the sort of learning that may take place. A VLE could end up being prescriptive and formulaic, encouraging the application of a standard format or template, and discouraging, implicitly or explicitly, innovative use. However it was not really clear which would be the most influential in creating an effective learning environment, the set up of the VLE or the strategies adopted by the lecturers. Therefore I decided to explore what effect lecturers said technology use had on teaching and teaching had on technology use.

A VLE created to support and deliver an outreach programme at Queen's University Belfast was developed around what and how the lecturers intended to teach. The design was based on the teaching format used before the application of the technology. Lecturers were asked what they wanted to do, but responded with “How can I tell you what I need, when I don’t know what the technology will enable me to do?” (Lee & Thompson, 1999, p.5). This resulted in teaching strategies being mapped onto the technology and the use of collaborative technologies such as discussion lists not being used or valued by the learner (*op. cit.*, p. 14).

Developers of COSE, at Staffordshire University, on the other hand, identified the provision of an effective learning experience as their goal where learning is defined as an active process, measured in teaching by the achievement of specified outcomes (Stiles, 2000). “The process is concerned [...] with the acquisition of subject specific knowledge and skills [and] the development of more general, or strategic, approaches and skills” (Stiles, 2000, p.5). As a result the VLE was structured around the idea that a course is a group of people to whom learning opportunities can be flexibly assigned (Britain & Liber, 1999). The traditional view of a course sees it as a body of content to which a teacher and



a group of students are assigned. Developers of other VLEs have often used this traditional format in the set up of the learning environment and it can be problematic if there is more than one teacher involved.

Lecturers' conceptions about teaching and learning are important, for it is they who choose, set up and implement the learning environment for the students. Of course educational developers and institutional decision-makers have a role to play, but for the use of technology to reach critical mass and justify investment, it is the end users, the lecturers and students, who matter. Lecturers have a role in promoting the use of the technology: if students cannot see the purpose of using it then they will not be happy to engage with it.

This was demonstrated by student acceptance of VLE use at a Midlands University (Moron-Garcia, 2000). A lecturer who communicated his negative attitude towards the VLE, accentuating 'bug' problems, downtime in the network connections and dislike of the interface, reported negative perceptions in his students who displayed a reluctance to use the synchronous and asynchronous communication tools within the VLE. If the desire is to improve student learning then lecturers' beliefs about what teaching and learning mean and their role in facilitating learning will be important; technology use has to be meaningful and worthwhile. The following section highlights some further lecturer concerns that might affect the use of technology.

## ***2.5 Lecturers' concerns and the effect of context***

Previous research has shown that some lecturers have concerns related to the use of Web and Internet-based technology to support teaching and learning (Moron-Garcia, 2000).

The perception was that e-commerce had failed and that e-learning would not be far behind: the Dot.com boom and bust and the recent failure of the UK e-university did not

inspire confidence. Their concerns include students who use information on the Web as sufficient in itself, making no reference to books or other sources of information and those who have little regard for quality control or the reliability of a source. However, with increased accessibility to online journals and organised online resources pointing to reputable sources of information, this should be possible to overcome. They also fear a surface approach to learning, students who grab what they need and move on, without engaging with the material. Some commentators argue that given the quantity of information it is necessary to deal with these days this may not be a bad strategy (Heppell, 2000) as long as it was part of a strategic approach to learning, rather than a surface approach.

It is possible that the expression of these fears by lecturers really hides another fear, that of their inadequacy in technical matters. It is known that the level of a lecturer's IT literacy will probably affect their choice and use of elements of the 'new' technology (see Barnard, 1999). Fraser (1997) and Goodyear (1998) report that much of the failure of previous developments was due to the lack of technical support. Johannesen and Eide (2000) attribute teachers' inability to use technology to their feeling unable to master the technology or not knowing how to combine this with the subject matter. It is recognised that there must be an understanding of and a commitment to ICT, along with a coherent IT strategy at departmental, institutional and national level (Fraser, 1997), which should include a commitment to training. Some institutions have met this challenge by providing and delivering training by means of the 'new' technologies so that staff experience what it is like to be a student using the technology (Hewson & Hughes, 1999; Spratt, Palmer, & Coldwell, 2000).



Surry argues that "... many theories for encouraging faculty to use technology suggest providing access to powerful technologies is sufficient, when combined with a minimal support infrastructure, to bring about meaningful change." (2000, p.146). He goes on to say that "... most university-level technology strategies ignore the central role that faculty play in the change process" (*op. cit.*, 2000, p. 149) and suggests four strategies for increasing faculty motivation to use technology. The four strategies are:

"Attention gaining ... designed to make faculty aware of the different types of technologies available to them and to demonstrate the power and potential of those technologies. Relevance ... designed to make the use of technology relevant to the needs, hopes, desires and goals of the individual faculty member. Confidence building ... designed to create the effective support systems and robust technology infrastructure that are required to successfully develop and implement technology. Satisfaction ... designed to provide rewards to faculty who use technology and incentives to faculty who don't."  
(Surry, 2000, pp. 149-50)

Somekh (1998) indicates a range of decisions that need to be made if ICT is to be used effectively. These relate to resources, tasks, teaching and course organisation. They include making decisions about the level of resources available for students, examining the nature of the tasks ICT is used for (whether they are beneficial to learning), asking about the changing nature of the teacher's role if ICT is used and deciding whether teaching methods should be changed in order to make better use of ICT. She also warns that it should not be assumed that learners have the necessary level of IT literacy.

Deepwell and Syson (1999) used their experience of implementing a VLE at Coventry University to identify five key principles that need to be borne in mind when introducing a VLE: fully utilise central support, simplify procedures, provide local support, build on current practice and always expect change. The JISC briefing papers on MLEs and VLEs



(2001) suggest that the issues of importance with respect to teaching and learning that should be considered include:

- the need for cultural change to make best use of the opportunities presented by the new technology,
- the importance of vanguard users and enthusiasts in raising awareness,
- the need for training in technical and administrative aspects of the VLE
- the need to train teachers how to teach online, how to support students using the VLE, how to design and produce content suitable for student use
- the need to protect copyright and intellectual property rights

The issues raised by the literature suggest some contextual factors that may impact on lecturers' use of a VLE.

## ***2.6 Conclusion***

This literature review indicates that there are a number of factors that affect the use of Web and Internet-based technologies to support teaching and learning in Higher Education.

Those factors that encourage use include Government policy, perceptions that Higher Education has a responsibility to provide students with the IT skills required by employers and the belief that Web and Internet-based technology will help lecturers to cope more effectively with increased workloads and more students. Those which may hinder use include lack of technical support, lack of lecturer IT literacy and the training to improve it, lack of institutional and departmental policy and lack of thought about the pedagogy used.

The literature indicates that there has been a move towards student-centred learning and constructivist approaches in Higher Education and that instructional designers and developers have taken on the ideas of constructivism in an attempt to provide learning environments that more closely match these approaches. However, writers and researchers

also warn about the indiscriminate use of technology. They state that the pedagogy is more important than the technology and that lecturers should think about the methods they use and the objectives of technology use before applying it. It was not known if this debate about the role of pedagogy in the application of technology reflected what was actually happening in universities or whether practitioners were taking heed of it.

Another gap in the knowledge, at the beginning of the study, was knowing how widespread the use of Web and Internet-based technology was, particularly in the case of Virtual Learning Environments. The literature was biased towards the use of Web and Internet-based technology in distance education and examples from other countries, such as Australia and the United States. Examples from 'conventional' or face-to-face education in the United Kingdom were usually about isolated cases of innovation.

There was no clear definition of student-centred learning given by those writing about the use of Web and Internet-based technology, although constructivism is cited as being influential in the creation of effective learning environments and in teaching in Higher Education. It was not known if this was influential in the way lecturers taught and used the technology and given the reservations of some researchers about the possibility or suitability of applying constructivism to courses in Higher Education, whether it was suitable. However, if the intention is to create environments that support student-centred learning then constructivist ideas could facilitate this, although the particular application may depend on the context of use, for example intended outcomes and the course level.

The literature review generated a number of questions: Were institutions really moving towards VLE use? How did lecturers use the technology? Could any of this use be classified as student-centred and was VLE use actually changing the way lecturers taught?



Was there a move towards a student-centred model of education and did a VLE encourage or facilitate it? The literature indicated that it was also necessary to consider contextual factors that might impact on VLE use. These questions made it possible to identify some areas for investigation, which could be used to create the research questions. The areas for investigation were:

- What Web and Internet-based technology do lecturers currently use to support teaching and learning?
- What pedagogic model does a lecturer use and what influences it?
- Does a lecturer use student-centred methods and are any of these supported by Web and Internet-based technology?
- Is a lecturer's use of Web and Internet-based technology influenced by their pedagogic model or are they more influenced by what they believe the technology can do?
- What other factors influence the use of Web and Internet-based technology?

The research questions became:

- Can Virtual Learning Environments support student-centred learning and how does the functionality of the system affect lecturers?
- What are the motivating factors for lecturer use of Virtual Learning Environments and what prevents them being used?
- How are lecturers using Virtual Learning Environments, what methods are they using and how does this fit into their overall pedagogy?



## **Chapter 3: Developing the methods – the pilot study**

The purpose of this chapter is to explain the workings of the first part of the research. Section 3.1 begins by outlining the research questions, explaining the context of the research, including the need for a pilot or feasibility study, and the reasons for using a qualitative approach. Section 3.2 details the construction of the interview guide and the way in which the interviews were conducted. Section 3.3 describes the institutions and the interviewees involved in the pilot study as well as the way they were identified and approached. Section 3.4 explains the creation of an analysis framework, the way in which the data was analysed and summarises relevant findings. Section 3.5 concludes by outlining the implications for the research questions and the design of the main data collection.

Several lessons were learnt in the process of analysing data collected for the pilot study. One was in respect of the need for full transcripts and a second concerned the need to be less rigid in the creation of analysis categories. I created some difficulties for myself, initially, by trying to find data that would match pre-determined facets of each category rather than allowing the data to inform the creation of sub-categories as I analysed it. The need to be able to sort, search and try out different ways of classifying the large amounts of rich data collected suggested that a qualitative analysis software package would be useful for the main study.

### ***3.1 Aims, objectives and feasibility***

This pilot study was carried out in order to explore what types of Web and Internet-based technology were being used in Higher Education Institutions (HEIs) and to investigate whether Virtual Learning Environments (VLEs) were part of this use. The focus of the

research was the individual lecturer, because it is they who, within an institutional context, decide whether or not to adopt the technology and encourage their students to use it. The objective was to inform the design of a main study investigating the use of VLEs in face-to-face higher education. It was necessary to ascertain what data could be collected (whether lecturers used VLEs and I could gain access) and to determine whether the focus of the research questions was suitable. I decided to adopt a qualitative approach, using interviews, because of the exploratory nature of the research and a desire to understand lecturers' experiences.

Qualitative research methods are employed to investigate the perspectives people have on particular issues or about events they experience and to discover the meanings they attach to their behaviour (Denscombe, 1998; Rudestam & Newton, 1992; Woods, 1996). This research sought to understand the use of VLEs in face-to-face higher education. The pilot study aimed to understand why and how lecturers were using Web and Internet-based technology (looking in particular for VLE usage) and whether it encouraged or facilitated student-centred teaching and learning. The objective was to explore factors that might affect the teaching approach adopted and to identify the impact of context. The first might include factors such as the pedagogic model held by a lecturer, their attitude towards technology, their ICT skill level, subject area and student profile while the second might concern type of institution, the availability of technical support and student ICT comfort level. The approach adopted was informed initially by techniques used in ethnography and later, particularly when analysing the data collected for the main study, by Grounded Theory (see Chapter 4, Section 4.5).

Ethnography seeks to understand the perspective of a particular group of people who share the same culture, in this case lecturers using a VLE to support their teaching, and uses a



range of techniques including observation, field notes, interviews and questionnaires to collect data about the situation being studied. In this case interviews *in situ* were used supported by field notes recording observations about the environment of use, rather than observation of teaching or questionnaires, for the reasons outlined below (see p. 111 and p. 59 respectively). Another characteristic that ethnographic research has is a “funnel” structure, being progressively focused over its course. Over time the research problem needs to be developed or transformed, and eventually its scope is clarified and delimited, ...” (Hammersley & Atkinson, 1995, p. 206). This is consistent with the way in which this research, and the questions that directed it, was refocused and revised as a result of the pilot study.

Quantitative methods were considered inappropriate due to the exploratory nature of the research, the relatively small number of intended participants (initially 12 lecturers out of 143,150 in UK Higher Education<sup>18</sup>) and the time limit on the study which prohibited the collection of huge amounts of data. Furthermore, in trying to identify possible participants it became obvious that there were a limited number of people using Web and Internet-based technology (let alone VLEs) to support their students and to the extent that they felt comfortable talking about their experiences.

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<sup>18</sup> Total number of full and part-time staff, figures from “Higher education in facts and figures – Summer 2003” based on academic staff figures from 2001/02 available at <http://bookshop.universitiesuk.ac.uk/downloads/factssummer03.pdf>.



At that time (early 2001) it appeared as if Web and Internet-based technology was in use at many higher education institutions (HEIs)<sup>19</sup>, although it was not clear how it was used to support teaching and learning. Neither was it known whether lecturers had actually reviewed or even thought about the teaching methods used, or the suitability of technology use, as suggested by Alexander (1995) among others. VLEs were receiving a lot of attention as lecturers attempted to find a way to comply with the many expectations placed upon them (increased administrative duties, changing student profiles, a need to undertake research and teach effectively). VLEs are presented as a way to manage students' learning, support flexible and self-paced learning, provide easily accessible content and reuse materials already held electronically.

A review of literature about the use of Information and Communications Technology (ICT) to support teaching and learning in higher education did not indicate how widespread the use of Web and Internet-based technology really was in universities in the UK; there were few published cases of VLE use. The available evidence dealt with individual case studies describing personal motivation and experience, for instance Gibbs (1999) and Lee and Thompson (1999), or with the experience in individual institutions (Deepwell & Syson, 1999). There were few examples of sustained and widespread use<sup>20</sup>, except in the case of distance education. The results from a UCISA<sup>21</sup> survey published after this pilot study was carried out support this observation. Jenkins et al state that:

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<sup>19</sup>Each HEI has its own Web site (see <http://www.scit.wlv.ac.uk/ukinfo/uk.map.html>) through which it is possible to find School and Department course and staff Web sites. Most HEIs also have staff and student e-mail directories indicating that staff and students are allocated e-mail accounts.

<sup>20</sup> This is consistent with Goodyear's (1998) observations that many innovative educational ICT packages have failed to be adopted by those outside the original project team, citing the outcomes of TLTP projects.

<sup>21</sup> The Universities and Colleges Information Systems Association <http://www.ucisa.ac.uk>

“VLEs are a new development for many institutions and, with a few exceptions, the level of staff and student engagement is correspondingly limited” (2001, p. 3).

A survey of the literature and of university Web sites indicated that some of the new or post-1992 universities<sup>22</sup>, for example, Coventry, Middlesex and Sheffield Hallam, had made a commitment to the use of commercially available VLEs such as WebCT and Blackboard. A number of them had developed their own systems: coMentor at Huddersfield, COSE at Staffordshire and WOLF (now developed commercially as Learnwise) at Wolverhampton. The use of VLEs at the older Universities was less evident. The UCISA survey also supported this observation and suggested that this may be due to more centralised structures in the post-1992 Universities, something I had noted in my contact with institutions. Another contributory factor may be the need to support a more varied student body, with no commensurate increase in resources; the post-1992 universities had been at the forefront of the expansion in higher education which led to the inclusion of more mature and part-time students.

The overall aim of the research was to understand the use of VLEs, as a particular example of Web and Internet-based technology, in face-to-face higher education. The research questions at the time of the pilot study were:

- Can Virtual Learning Environments support student-centred learning and how does the functionality of the system affect lecturers?
- What are motivating factors for lecturer use of Virtual Learning Environments and what prevents their use?

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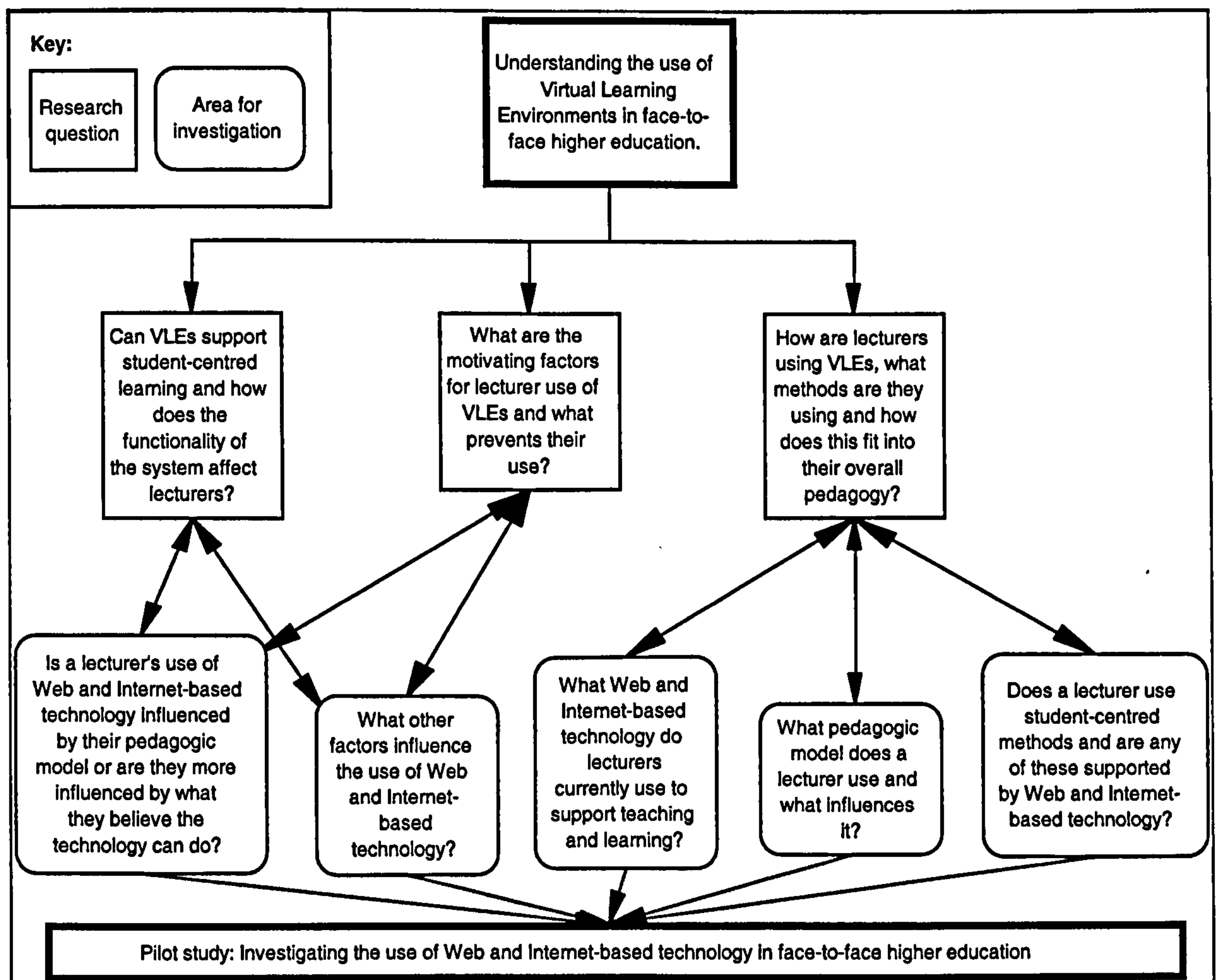
<sup>22</sup> The former Polytechnics were granted University status by the 1992 Further and Higher Education Act

- How are lecturers using Virtual Learning Environments, what methods are they using, and how does this fit into their overall pedagogy?

These questions provided a focus for the investigation and highlighted one of the aims of the investigation: to examine some of the claims made for Web and Internet-based technology in the literature, such as whether it can encourage or facilitate a student-centred approach to teaching and learning. Moreover, they reflected my expectation that VLE use could be affected by lecturer perceptions about the ease and suitability of technology use as well as by the way they normally taught. They indicated my intention to explore why and how lecturers used VLEs and to identify factors that may support and prevent VLE use. This intention became clearer as the research progressed and led to the revision of the research questions (see Chapter 4).

The research questions were constructed from a series of questions or areas for investigation, arising from the literature review, which also provided a starting point for the creation of interview questions. Figure 3.1 shows the relationship between the research questions and the areas for investigation listed at the end of Chapter 2.





**Figure 3.1: The relationship between the research questions and areas for investigation in the pilot study**

The following section explains the development of the pilot study interview questions and the creation and use of an interview guide.

### ***3.2 Creating and using the interview guide***

Interviews were used to collect the pilot study data because this research was of an exploratory nature and information gathered by interview provides more detailed in-depth information from a smaller number of participants than does survey information gathered using a questionnaire, for example. Focus groups or group interviews would have been

impractical bearing in mind the time pressures on prospective participants, therefore individual, face-to-face interviews were conducted.

There are weaknesses associated with interviewing: "...it is prone to subjectivity and bias on the part of the interviewer." (Cohen, Manion, & Morrison, 2000 p. 269) and some important issues may be missed. According to Patton "... interviewer flexibility in sequencing and wording questions can result in substantially different responses, thus reducing the comparability of responses ..." (1990 p. 288). Nevertheless "... it allows for greater depth than is the case with other methods of data collection." (Cohen et al., 2000 p. 269) This made interviewing suitable for an investigation that was intended to explore the area for research and to provide guidance for the design of the main study. The weaknesses outlined clarified the need to think about the interview questions beforehand and to explain thoroughly the way in which the questions were drawn up and the procedures implemented.

Research methods literature such as Cohen, Manion & Morrison (2000) identifies a variety of interview types, the main difference being in the degree of structure which is determined by the intended purpose. For example Fontana & Frey (1994) identify three major types (structured, group and unstructured) while Patton (2002) outlines four types (informal conversational interview, interview guide approach, standardised open-ended interviews and closed quantitative interviews). Lincoln and Guba suggest that:

"... the structured interview is useful when the researcher is aware of what she does not know and therefore is in a position to frame questions that will supply the knowledge required, whereas the unstructured interview is useful when the researcher is not aware of what she does not know and therefore, relies on the respondents to tell her." (Lincoln & Guba, 1985 p. 269)



I adopted a semi-structured approach because I wanted to investigate specific areas and cover similar topics with each interviewee, in order to provide a basis for comparison and analysis. However, I did not know whether the issues identified by the literature and used to construct the interview questions were actually relevant to lecturers in face-to-face higher education. Therefore I had to allow for issues to be raised by the interviewees and try to avoid being unduly influenced by preconceived ideas. For example, I became aware of my own preconceptions about university organisation when lecturers in pre-1992 universities were explaining that Schools and Faculties in those institutions had a great deal of autonomy and could decide whether or not to follow a particular institutional policy. My experience in post-1992 universities and secondary education meant that I had assumed centrally decided policy would be followed, eventually.

At the time of the study literature relating to the use of computer mediated communication (CMC) and online or Web-based learning tended to be biased towards the distance learning community or was set in other countries' higher education contexts, for example Australia, and the United States. Barriers to the use of ICT, identified in the literature, with the exception of some case studies of individual use, either referred to technologies different to and older than the Web and Internet-based being investigated or to the use of ICT in other types of education, such as colleges of further education or schools. Moreover my expectations were largely informed by experience as a teacher in secondary education attempting to use IT and encourage others to do so, as a student in higher education, not a lecturer, and on issues raised by previous research on VLE use (Moron-Garcia, 2000).

Patton calls a semi-structured approach the interview guide approach:

“... topics and issues to be covered are specified in advance, in outline form; interviewer decides sequence and working of questions in the course of the interview ...” (Patton, 2002, p. 349).



The interview guide approach allows for the systematic collection of data, providing prompts to avoid the omission of important questions, and the possibility of capturing data not necessarily on the guide. It is possible for additional issues to be raised by the interviewee, for the interviewer to ask for further clarification of terms used by interviewees and for issues that appeared relevant only when interviewing to be explored. Although it is not usual for interviewers "... to go into totally new subjects that are not covered within the framework of the guide" (Patton, 2002, p.344). "Interviews remain fairly conversational and situational" (op cit, 2002, p. 349).

The wording for most of the questions was decided in advance, for consistency's sake, and the prompts were intended for use if the interviewee was unsure or not forthcoming and to remind me, the interviewer, to seek clarification of important issues. The order in which topics were considered was structured by the interview guide, but was also influenced by the way in which the interviewee developed ideas relating to the issues raised, in line with the nature of semi-structured interviews (Denscombe, 1998). The aim was to be flexible in approach so that if an interviewee spoke about an issue that appeared at a later point in the guide, but had relevance to ideas and themes that were being discussed at that point, the questions and prompts for that issue could be used.

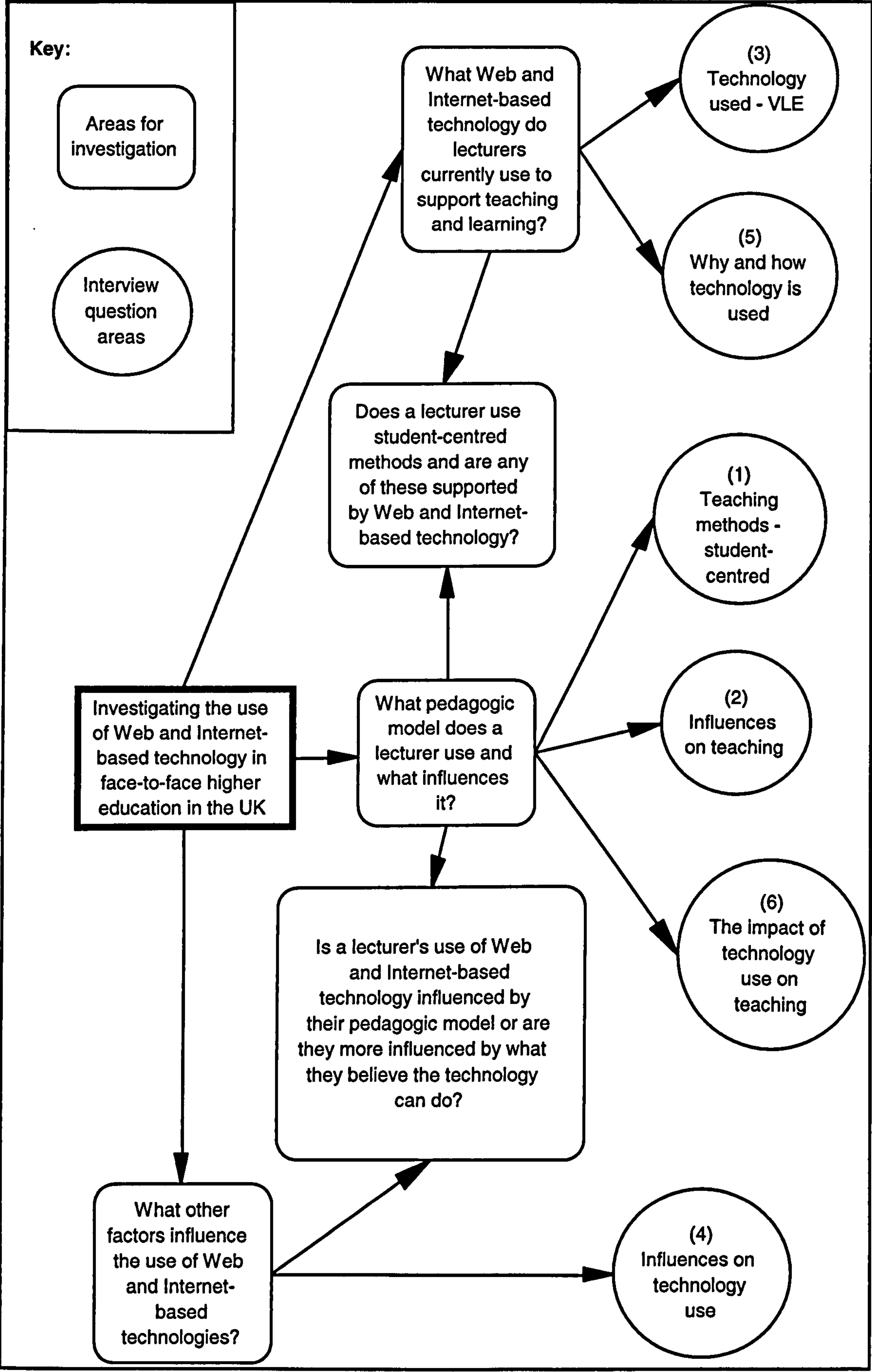
The wording used was intended to encourage interviewees to talk, rather than allow 'yes' or 'no' to be answered. Moreover, it was important not to give the impression that value judgements were being made when asking about an interviewee's approach to teaching or whether they had undertaken any teacher training, for example. It was vital to recognise that some interviewees using student-centred approaches may not have had the vocabulary to describe them as such. The purpose was to enquire how interviewees were adapting to the use of Web and Internet-based technology and in particular VLEs and to find out what

their perspectives were on their particular institutional context. This was checked against information provided by ‘context’ interviewees (page 77).

The interview guide, consisting of a series of questions and prompts, was created with reference to the areas for investigation described in Section 3.1. These were deconstructed to identify six areas that needed to be explored in the interview: teaching methods used, influences on teaching, Web and Internet-based technology used, influences on technology use, the reason for and the way in which technology is used, the impact of technology use on teaching. Figure 3.2 illustrates the relationship between the areas for investigation and the interview question areas, which are described below.

#### 1. Teaching methods used

I wanted to identify the teaching methods normally used by a lecturer, so that a comparison could be made with the methods interviewees said they employed when using a VLE and so I could understand whether this was just a replication of a lecturer’s normal custom and practice. I particularly wanted to know whether they used student-centred methods. I found previously that lecturers beginning to use a VLE tended to replicate their normal teaching approach (Moron-Garcia, 2000): those who normally adopted a transmission model applied this to their use of the VLE, by uploading pages of content and making little use of communication tools. Although this was also affected by what they thought it was possible to do with a VLE.



**Figure 3.2: The relationship between areas for investigation and interview question areas**



## 2. Influences on teaching

In order to understand the teaching approach adopted by an interviewee and whether VLE use had affected this I also needed to identify what else may affect the way a lecturer taught. I thought there might be a number of possible influences including: the course level and student numbers, departmental and institutional guidelines, colleague practice, lecturer understanding and application of particular educational theories, their teaching experience and the discipline area. This last was used as one of the selection criteria (see page 80).

## 3. Web and Internet-based technology used

It was important to ascertain what Web and Internet-based technology was used, whether or not VLEs were part of this use and if so what parts of a VLE were used, content pages only or communication tools as well. This might shed some light on the teaching approach adopted.

## 4. Influences on technology use

I wanted to understand what contextual factors impacted on the adoption of a VLE, for example the level of technical support and the type of pedagogic advice or suggested use, the availability of training and lecturer ICT skill levels.

## 5. Why and how technology was used

I wanted to understand the rationale for use as well as the way a VLE was used, whether use was purposeful, interviewees knew what they wanted to use the technology for, or exploratory, they were just trying out a new teaching tool. Understanding how technology was used tied in with the teaching approach used. I was looking for evidence of use to support student-centred methods in particular. I wanted to know whether interviewees

were using a VLE to deliver information or to facilitate activities and whether they had spotted a way to support something they could not do otherwise, to change the learning experience.

## 6. The impact of technology use on teaching

Again, in line with trying to identify the teaching approach adopted and influences on this I needed to understand whether the use of Web and Internet-based technology, and VLE use in particular, had impacted on the teaching methods lecturers adopted. It was important to consider other factors that may affect the teaching methods adopted and technology used, such as the context of use, student feedback and evaluation and any perceptions that lecturers may have about a VLE.

A draft interview guide was used to conduct a trial interview with an ex-lecturer colleague who had some experience of using new technology in her teaching. This was a way of checking (M. Wilson, 1996) that the questions were understood as intended or whether particular prompting was needed, that the interview took the time indicated to potential interviewees (an hour) and that the order of the questions was logical. It was also an opportunity to practice using the recording equipment.

Following the trial the order of the questions and prompts was altered to allow for the grouping of items dealing with similar themes and some questions and prompts were reworded to make them clearer. The six interview question areas became four themed sections of the interview guide:

1. Background - Describing their context,
2. Teaching - Talking about their teaching,
3. Technology use - Explaining how and why they use Web and Internet-based

technology and

4. Further comments - Reflecting on their practice.

The final questions and prompts used are shown in Appendix A and described and explained in sections 3.2.1 to 3.2.4.

3.2.1 Part One: Describing their context

Part one (Table 3.1) was designed to put interviewees at their ease, to put their teaching in context. I used the initial question as a sound check; this was recorded and played back at the start of the interview. I asked interviewees to “... give me a bit of background about the time you have been lecturing and what your post or job involves?” because of the effect experience and departmental responsibilities might have had on the teaching approach adopted and the way a VLE was used.

Background
<ul style="list-style-type: none"><li>• Length of time lecturing / in this job?</li><li>• Title (i.e. position within department, any special responsibilities)?</li><li>• Subject specialism?</li></ul>

Table 3.1: Questions and prompts investigating an interviewee’s background

3.2.2 Part Two: Talking about their teaching

Part two (Table 3.2) aimed to identify the teaching methods used and any influences on these, to understand whether interviewees had any conception of student-centred learning or used any student-centred approaches and to find factors that might have caused interviewees to change their teaching approach.



Teaching
<p>How do you teach (generally)?</p> <ul style="list-style-type: none"> <li>• Could you briefly run through what you do when you teach (i.e. in lectures / seminars / workshops) Do you have a preferred way of teaching?</li> <li>• Have you developed any particular techniques to deal with specific kinds of classes / students? E.g. ones who do not have a required level of knowledge</li> <li>• What strategies do you use when something does not go as planned / expected?</li> <li>• What do you consider to be your most successful approach?</li> <li>• What would you say were your strengths as a teacher?</li> <li>• Is there anything or anyone who has influenced your teaching and in what way? (e.g. any training?)</li> <li>• What do you think excites or interests students about your subject and what do you do to make the important but less interesting elements more student-friendly?</li> <li>• How do you evaluate what you do?</li> <li>• How has student feedback (e.g. modular evaluation forms) affected how you teach?</li> <li>• Peer feedback – appraisal?</li> </ul>

**Table 3.2: Questions and prompts investigating the teaching methods used by interviewees and influences on their teaching**

It was important to identify examples of interviewees’ teaching methods because research has demonstrated that there is a difference between what lecturers think they are doing and what they are actually doing (Murray & MacDonald, 1997). The examples “lectures / seminars / workshops” were there in case clarification was needed and because traditionally these are the names given to blocks of teaching time which may denote different teaching strategies. I did not ask interviewees directly about their knowledge of educational theories, this might have implied expected knowledge, but instead asked them to identify any influences on their teaching. I hoped that they would talk about formal teacher training in response to this as well as any pressure they felt to conform to a particular teaching model, for example departmental and institutional convention. Some indicators of a student-centred approach are a willingness to engage with the students, to enter into a dialogue, to guide and to provide feedback to correct misconceptions, the use

of group work, activities and in-class discussion. Therefore I listened for examples of these strategies.

I asked interviewees about student reactions to their teaching in order to explore possible causes of change (for example, evaluations, student feedback, teaching observations, appraisals or teacher training) and as a way of gauging whether they evaluated the way they taught. I created an extra prompt to remind me to ask about the impact of any appraisal schemes, bearing in mind the increasing interest in improving teaching in higher education. I considered the possibility that technology use may have influenced the teaching methods however the plan was to ask about that separately, in the following section of the interview.

### **3.2.3 Part Three: Explaining how and why they use Web and Internet-based technology**

Part three (Table 3.3) was designed to explore the reasons for technology use and any factors that may impact on this use, informed by the literature review. I endeavoured to find out if resource levels and the level of support in interviewee institutions were considered adequate or problematic and what influence, if any, colleagues' use of the technology and institutional and departmental policy had.

I asked about the type of training available so that I could understand whether it had a pedagogic or technical emphasis (hence the use of the words 'support' and 'training'), because of the influence this might have on the way a VLE was used. I considered the possibility that interviewees might believe the way a VLE was set up would not allow



them to use their desired teaching methods, causing them to use other Web and Internet-based technologies instead or refrain from use altogether.

Technology use
<ul style="list-style-type: none"> <li>• What technology is available, for staff use, within the Institution? – and for students?</li> <li>• What support or training is there? Have you received any training – institutionally provided or personally sought?</li> <li>• How confident / comfortable are you with using Web and Internet-based technology? – in general and in your teaching technical proficiency? On a scale of 1 = not computer literate to 5 = expert</li> <li>• What led you to use Web and Internet-based technology in your teaching?</li> <li>• Do you use Web and Internet-based technology in teaching activities or to support students outside contact times?</li> <li>• How does the availability of technical support while teaching / setting up activities affect what you attempt?</li> <li>• Tell me what sort of technology you use and the reason behind your decision?</li> </ul> <p>Sort of tech used:</p> <ul style="list-style-type: none"> <li>• Generic technology (e.g. Web pages and an e-mail package)</li> <li>• virtual learning environment?</li> </ul> <p>Explore use of electronic communications, for example:</p> <ul style="list-style-type: none"> <li>• e-mail</li> <li>• discussion list / forum</li> <li>• electronic delivery / return of work</li> </ul>
Change
<p>Has the use of Web and Internet-based technology changed what you do in any significant way?</p> <ul style="list-style-type: none"> <li>• Has it changed the way you teach – less f2f / decided not to use tech because f2f more suitable?</li> <li>• Any surprises / unexpected benefits? Difficulties / problems?</li> <li>• Has this changed how you think about teaching?</li> </ul>

**Table 3.3: Questions and prompts investigating an interviewee's use of technology to support teaching and learning**

Other researchers have written about the confusion and uncertainty created by the profusion of tools available in some learning environments (for example Firdyiwek, 1999).



Therefore I asked interviewees to tell me what Web and Internet-based technology they used (Web pages and stand alone software tools, a VLE or a combination) and why. This also enabled me to incorporate data from University D where a VLE was not used, but under consideration. Finally I asked interviewees about the effect of VLE use on their teaching, as a way of gauging whether technology was indeed encouraging the adoption of a more student-centred approach.

### 3.2.4 Part Four: Reflecting on practice

Part four (Table 3.4) was designed to allow interviewees to reflect on some of the lessons learnt from their use of the technology and to provide an opportunity to raise any other issues that had occurred to them during the interview.

Further comments / thoughts
<p>What advice would you give a new member of staff?</p> <p>Do you have any issues or concerns you would like to raise about the use of Web or Internet-based technologies?</p> <ul style="list-style-type: none"> <li>time / effort involved to produce materials</li> <li>institutional pressure to use new technology</li> </ul> <p>Where do you see your usage going next? - more tech use, less, different</p> <p>Would you like to add anything else?</p>

**Table 3.4: Questions to allow concerns to be expressed and to elicit further comments**

A secondary aim was to investigate issues highlighted by the literature that may not have been mentioned by the interviewee thus far, for example whether the time needed to produce materials and moderate electronic discussions was a barrier to the use of technology. My previous research (Moron-Garcia, 2000) had indicated that lecturers were concerned about the amount of time it took to set up a course within a VLE, something also commented on in the literature (Collis & Nijhuis, 2000).

The interview guide was prepared while interview sites were being identified. The following section describes the institutions and the interviewees involved in the pilot study and the way they were identified and approached.

### ***3.3 Interviewees and institutions***

This pilot study collected data from four Higher Education Institutions (HEIs): two pre-1992 universities (A and D), two post-1992 universities (B and C). A total of fifteen face-to-face interviews were carried out. These included twelve separate interviews with individual lecturers about their use of Web and Internet-based technology to support teaching and learning and three interviews with four institutional staff (educational developers and learning technologists). These last were aimed at understanding the context of use better and helping to identify suitable lecturers to interview, rather than answering the research questions per se, and one of them involved two members of staff (see page 78).

Section 3.3.1 explains why I decided to conduct contextual interviews and describes the institutions and which VLEs were used, while section 3.3.2 describes the way interviewees were identified, the discipline areas targeted, the way they were contacted and the way data was recorded.

#### **3.3.1 Institutional interviewees and context**

I felt that it was important to obtain interviewees from both types of institution because of differences in VLE take up discussed previously (page 61), therefore I approached people at four universities (two pre-1992 and two-post 1992) to give myself a better chance of finding interviewees. In the event it was possible to obtain interviewees from all the

universities approached. It proved difficult to find pre-1992 HEIs providing VLEs for their staff, hence the inclusion of one (University D) where lecturers were using generic Web and Internet-based technology rather than a VLE. This did however afford me the opportunity to explore whether interviewees thought VLE use would add anything to their use of Web and Internet-based technology<sup>23</sup>. Table 3.5 details the type of institution where interviews took place and the VLE used there.

HEI \ VLE	WebCT	VLE-B	None
Pre-1992	A		D
Post-1992	C	B	

**Table 3.5: Institutions and VLEs used**

Interviewees were identified through contact people at three universities (A, C and D)<sup>24</sup>. These contact people were also interviewed so that the use of Web and Internet-based technology could be put into context. University B was known to me, therefore it was easier to identify potential interviewees and to understand the institutional context. The ‘context’ interviews at Universities C and D were with representatives of each university’s educational development centre. At University D the two context interviews, were individual, face-to-face interviews (which were not recorded due to the unavailability of working equipment). The interview at University C was also conducted face-to-face, but it

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<sup>23</sup> D1 was hostile towards the idea of a VLE, see comments on page 106, while D2 and D3 had no particular strong opinion either way.

<sup>24</sup> People at universities A and C were known to my supervisors, a friend working at University D provided contact details.



involved two people<sup>25</sup> and was audio-taped. The context interview at University A was conducted as part of the interview with lecturer A1 who, through his research group, had been instrumental in deciding that a VLE should be purchased for use at University A. This was audio-taped.

I asked the context interviewees what role they thought Web and Internet-based technology had in supporting teaching and learning and what was happening in their institution with respect to the implementation or use of VLEs and Web-based technology, to gauge whether there was any institutional policy. Then I asked for their comments about how lecturers were using the technology, whether they thought lecturers were choosing or directed to use it during contact time or to support learning outside contact time. They were also asked to suggest particular lecturers who were using Web and Internet-based technology to support face-to-face teaching and learning and who may be willing to be interviewed.

The context interviews indicated that the universities were at different stages of VLE implementation. University A ran a commercially available VLE, WebCT, promoted and supported by a university research and development group, accessible to any Schools buying into that group, with the intention that it be rolled out across the institution in the academic year (2001/2002). University D did not have an institutional VLE at that stage, although it had begun an in-house consultation process about the possibility of implementing one across the University. None of the departments visited used a VLE (although it was noted that at least one School in the university had adopted one independently). Lecturers at University D made use of institutionally supported

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<sup>25</sup> The original interviewee decided that it would be useful for me to get the opinions of a colleague, so both were interviewed at the same time, with each answering questions related to their area of expertise.

communication tools such as e-mail, available to all staff, or Web-based ones such as 'Newsgroups' and Web authoring packages to create Web pages hosted on university servers.

The two post-1992 universities by contrast had progressed further with the implementation and use of a VLE. University B rolled out a home-grown VLE, what will be referred to as VLE-B, across all campuses 2000-2001. There was a policy decision that all level 1 courses (that is, first year undergraduate) should have a VLE presence by 2002. University C had made a commercially supplied VLE, WebCT, available for all staff, on a voluntary basis, following consultation in 1998. By September 1999 all their students were given accounts in WebCT on enrolment.

Both of the VLEs in use employed a similar package of tools: content authoring and management, asynchronous (discussion forum, e-mail) and synchronous (chat) communication tools, quizzes (multiple choice, true and false, fill in the gap, compare to a model answer). The only obvious difference in the functionality of the two systems was the fact that the university's e-mail system was an integral part of VLE-B, necessitating one log-in, through the VLE. At that time WebCT had what was in effect a separate e-mail box for each module or course site. According to interviewees this had been problematic, proving unwieldy, a cause of missed and unread e-mails on the part of the student and extra work for the member of staff (remembering to log on separately to check mail). This was something that continued to be problematic for most main study interviewees (Chapter 6).

### **3.3.2 Interviewees and discipline areas**

I targeted three discipline areas; my aim was to obtain an interviewee from each area for each university. The discipline areas chosen were education, computer science and subjects from the humanities and social science areas. My rationale was to try and identify whether pedagogy or technology was driving the use of Web and Internet-based technology (including VLEs). I needed to take account of the possibility that some lecturers would have a greater understanding of some of the areas under investigation. For example it was assumed that computer science lecturers would be more comfortable with the use of Web and Internet-based technology and that education lecturers would find it easier to explain and justify their pedagogy. Social science or humanities lecturers were chosen because there was no obvious reason why they would feel comfortable with the technology or would be familiar with pedagogic terms. These were also areas where I had some subject knowledge.

In addition I wanted to explore whether the discursive nature of the social science or humanities subjects had led interviewees teaching in these areas to use the communication tools within the environment. The definition of a VLE given in Chapter 1, p. 2, indicated that:

“The main difference between a VLE and other computer-based learning or computer-supported learning environments is the possibility of communication and collaboration with peers and tutors within the same virtual environment that holds the content.”

This is the element that distinguishes a VLE from ‘stand alone’ Web pages and can prevent use from becoming nothing more than a different way of presenting content and encouraging little more than electronic page turning. The use of integrated communication tools (and to a certain extent the quiz facilities with the possibility of instant feedback) is



what can make the learning environment less passive and more active and so support a student-centred approach.

Subject	Number of interviewees
Computer Science	3
Education	2
Humanities / Social Science	7

**Table 3.6: Subject breakdown of pilot study interviewees**

I contacted thirteen lecturers, including A1 (also a context interviewee) to take part in the study. Prospective interviewees were suggested by institutional contacts at universities A, C and D. I approached lecturers at University B, who I knew to be users of Web and Internet-based technology and VLE-B, directly. Table 3.6 shows the discipline areas represented by the subject interviewees which, as might be expected, did not exactly conform to the intended sample. For example, there was no School of Education at University C and one computer scientist, C1, originally expressed an interest in participating, but ultimately did not take part.

Table 3.7 gives more detail about the interviewees approached, including the subject taught and their gender. Twelve of those approached agreed to be interviewed. Three were computer scientists (A1, B1 and D1). Two were education lecturers (B3 and A4) and another (C3) was involved, a fifth of his allocated timetable time, in developing the teaching skills of fellow lecturers on his institution’s teaching in higher education certificate course. The following subject areas were also represented: Women’s Studies (B2 and C2), Politics (B2), History (D2), Law (C3), Public Policy (A3), Psychology (A2)

and English and American Literature (D3). Both men and women were evenly represented among those eventually interviewed, six men and six women<sup>26</sup>.

Interviewee	Subject discipline	Gender
A1	Computer Science / Institutional	M
A2	Psychology	F
A3	Social Science (Public Policy)	M
A4	Education	F
B1	Computer Science	M
B2	Social Science (Politics / Women's Studies)	F
B3	Education	M
[C1 (did not participate)	Computer Science	F]
C2	Social Science (Women's Studies)	F
C3	International Studies and Law, Education	M
D1	Computer Science	M
D2	History	F
D3	English	F

**Table 3.7: Pilot study subject interviewees**

The spread in subject areas came about because the interviewees were all volunteers. It reflected the request for interviewees in three broad discipline areas and the context interviewees’ desire to provide useful data. The consequence of this was that they nominated lecturers they perceived to be innovators, who were considered to be using technology effectively, identified as “people who were doing interesting things with the technology”. This is something that needs to be taken into account when drawing any conclusions from the data. The fact that interviewees were willing to participate and reflect on their practice (and by the same token that it was difficult to find people both using a VLE and willing to do this) told me that interviewees might already be more open

<sup>26</sup> This was interesting in view of the commonly held assumption that women are less likely than men to become involved in computer use, although it may just reflect the composition of the ‘sample’ – a higher proportion of humanities, social science and education lecturers where women are more heavily represented.

to new ideas and willing to innovate. I thought this indicated that they might be more likely to adopt a student-centred approach. This was a necessary trade-off in order to obtain interviewees.

All the initial contact was done by e-mail. I followed this up with a telephone call<sup>27</sup> in some cases. I contacted all the prospective interviewees by e-mail to ascertain whether or not they would be prepared to take part in the study (see Appendix B, Part One - Sample contact e-mail). Interviewees from University A contacted me to indicate they would be willing to take part following receipt of an e-mail circulated by A1. When introducing the research and myself I focused on the technology. My intention was to encourage potential interviewees to think about technology use while trying to avoid priming them to think in terms of teaching approaches and avoid them providing what they thought might be a 'correct' response, making it difficult to tell whether technology or pedagogy was driving use.

Interviewees who asked for further information (subject interviewees wanted to understand what they were committing to and the context interviewees wanted to be able to identify 'suitable' people for the study) were sent further information, as shown in Appendix B, Part Two - Short description of the pilot study. It was necessary at this stage to make it clear that the research was focusing on lecturers using Web and Internet-based technology to support face-to-face teaching and learning as it was often assumed that, being based at the UK Open University, I was only interested in distance learning. Despite emphasising that point one interviewee (A4) could only give examples from intended distance learning

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<sup>27</sup> Depending on the intricacies of making arrangements, if these became too convoluted it was easier to speak directly to the person concerned.



use because she thought this was the most suitable use of a VLE that fulfilled an identified need to provide a specialised course to a wider audience.

Permission to use the data collected was sought prior to the interview, confirmed by e-mail and checked orally as part of the preamble to the interview. This was something that was formalised for the main data collection through the use of a consent form and following further reading about ethical issues in research (for example Mason, 2002).

All the subject interviews were audio taped and I took notes at the same time using a facsimile of the interview guide. This was done to provide backup in the event of mechanical failure and to enable any observations to be recorded during the interview. Further comments and impressions about the interviews were recorded directly after the interview<sup>28</sup>. These indicated a number of common themes and began to inform the analysis of the data, which is dealt with in the following section.

### ***3.4 Data analysis***

The purpose of the pilot study was to evaluate the feasibility of a study on the use of VLEs and to inform the design of the main study. This section begins by describing the analysis framework that was drawn up before the data was collected (3.4.1) and goes on to explain the data analysis process and the development of the analysis categories (3.4.2). It concludes by showing the way I revised the pre-determined sub-categories, using the data collected (3.4.3) and explains what this told me about the use of Web and Internet-based technology and VLEs in particular.

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<sup>28</sup> This was not always possible if another interview was scheduled, in which case these were carried out as soon as possible after the interview took place, usually within two hours.

### **3.4.1 The analysis framework**

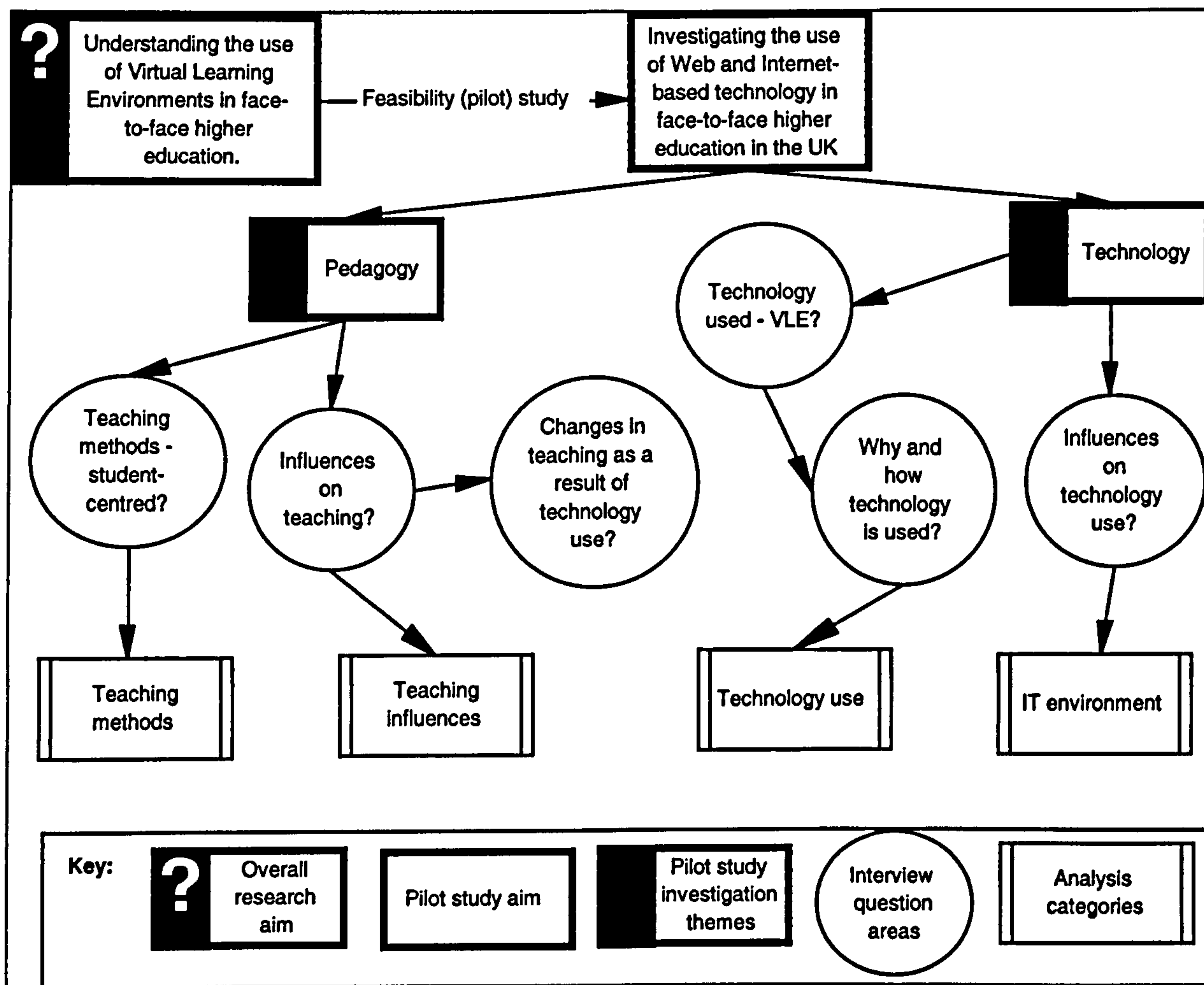
An analysis framework of four pre-determined categories was created from a re-examination of the aims and objectives of the research. They were informed by the research questions, the areas for investigation and the interview question areas. Brause recommends referring back to the research questions as a way to begin data analysis, pointing out that this is something many people forget to do (2000).

The original aim of the research was to understand the use of VLEs in face-to-face higher education. The objective of the pilot study was to work out whether this research was feasible. That is, whether it was possible to find lecturers using a VLE to support face-to-face teaching and learning who were also willing to be interviewed about why and how they used a VLE and the impact on their teaching. Understanding how VLEs were used was important in order to evaluate whether Web and Internet-based technology, on which VLEs were built, really did encourage or facilitate student-centred teaching. Therefore I asked interviewees to explain the way they taught and how technology use fitted into or changed the way they taught. Finally I investigated other factors that affected the teaching methods employed and the use of VLEs.

There were two themes to the investigation, pedagogy and technology. Figure 3.3 shows how these themes were related back to the interview question areas which indicated two parts to each theme, four overall categories: Teaching methods, Teaching influences, Technology use and IT environment. The first two categories were intended to classify comments relating to an interviewee's teaching methods and the factors that influence those methods. The last two categories aimed to capture the way in which Web and Internet-based technology was used and to identify contextual factors that interviewees said affected use. That is, to identify what it was about the institutional environment, the



technology or the skills and abilities of the users – students and lecturers – that supported or hindered use. I wanted to explore whether pedagogy or technology was driving VLE use.



**Figure 3.3: Pilot study data analysis categories**

I identified a number of facets for each category. I listed these facets or sub-categories alongside a series of examples or explanations of what might be found, to help me classify the data. These explanations came from literature on the use of ICT in education and on teaching and learning, my previous research, personal experience of teaching and being a student in higher education. Therefore the sub-categories reflected my expectations of



what might be found in the data as well as what the literature said was likely to be found.

The rationale behind the construction of each set of categories is explained below.

### ***Teaching methods***

The purpose of this category was to identify and classify student-centred elements in the teaching methods employed by interviewees. However, many of the writers on the use of Web and Internet-based technology do not actually explain what they mean by student-centred, it is just portrayed as diametrically opposite to a teacher-centred approach, described as the ‘sage on the stage’ or transmission model.

Instructional designers and developers on the other hand (for example Honebein, 1996; Knuth & Cunningham, 1993) make reference to constructivism. They argue that learning environments designed with reference to constructivist theories of learning will produce in students the critical and cognitive skills that Higher Education aims to develop (Jonassen et al., 1993). Constructivism has elements in common with student-centred learning in that they both set out to start from what the learner knows, recognise that we learn from experience and that this helps us construct our own representation of knowledge. Reflection and the reviewing of what is already known and what is learnt are also important (see Dalgarno, 2001; Morpew, 2000; Thorpe, 2000).

Biggs tells us that there are different schools of constructivism but

“... a consensus would be that learners arrive at meaning by actively selecting and cumulatively constructing their own knowledge, through both individual and social activity” (1996, p. 348).

It is generally acknowledged that Web and Internet-based technology can be used to support the construction of knowledge. For example, communication tools facilitate discussion and collaboration, supporting “social activity”, and it is possible to provide

wider access to resources in a networked environment and automated feedback to support “individual activity”.

Therefore, as discussed in Chapter 2, I decided to use a constructivist framework as a starting point for the creation of categories identifying student-centred teaching methods. I based this on the seven pedagogic goals for the design of constructivist learning environments listed by Honebein (1996), as shown in the first column of Table 3.8.

Seven pedagogic goals	Interpretation
1. To provide experience with the knowledge construction process	The student takes responsibility for deciding what topics to learn, how and the strategies to solve problems. The lecturers provide the framework and facilitate.
2. To provide experience in and appreciation for multiple perspectives	Students are encouraged to evaluate alternative approaches and solutions to problems.
3. To embed learning in realistic and relevant contexts	Activities are situated in authentic contexts.
4. To encourage ownership and voice in the learning process	Students identify their own issues and directions, goals and objectives. Lecturers act as consultants in helping to define the learning objectives, but are no longer the ‘font of all wisdom’; student experience is valued and contributes to the learning process.
5. To embed learning in social experience	The use of peer and student-teacher collaboration, discussion and debate.
6. To encourage the use of multiple modes of representation	The adoption of multiple media (for example, video, audio, printed text, computer) and different ways of representing information (for example, text, pictures) to provide richer experiences.
7. To encourage self-awareness of the process of knowledge construction	The use of reflection to understand how knowledge is constructed and the ability to explain the way in which a problem is solved.

**Table 3.8: Developing the teaching methods category**



I drew up a list of possible interpretations, to aid classification, based on Honebein's explanations of the goals (see Chapter 2, p. 44). The interpretations are shown in the second column. If lecturers talked in these terms about the way they facilitated learning and the sorts of tasks carried out by their students, it may indicate that they were employing a student-centred approach. These interpretations were then used to construct a list of teaching methods (Table 3.9) that might indicate a more student-centred approach.

<b>Teaching methods (TM)</b>	
1.	use of arguments, discussions and debates - students learn through collaboration and dialogue with peers and teachers
2.	acknowledge prior knowledge of students - student experiences, analogies and metaphors
3.	use of authentic experiences - use of real world scenarios, access to experts
4.	acknowledge the existence of multiple perspectives - expose student to differing opinions, different solutions, encourage use of evaluation to test and enrich understanding
5.	students control the learning environment, teacher facilitates - student-centred learning, students identify issues & directions, goals & objectives
6.	use of multiple modes of representation - rich experience uses many media - including multimedia, evidence of varied media, suitability? - and different representations of information
7.	encourage self awareness of knowledge construction process – knowing how we know (Honebein, 1996), reflexivity (Knuth & Cunningham, 1993), students encouraged to reflect on and revise learning

**Table 3.9: Teaching methods – initial categories**

### ***Teaching influences***

This category was influenced by my desire to understand the impact of training, whether an interviewee was aware of learning theories and whether interviewees evaluated their teaching or were affected by evaluation. I constructed a list of possible teaching influences and comments to look for, shown in Table 3.10.



Teaching influences (TI)
1. aware of literature on teaching and learning - current notions of good practice, say that they follow any particular theories
2. feedback / comment from students or appraisal process - may include evaluation of teaching
3. teacher training – note any comments about suitability of training or reasons given for not having undertaken training – may be factor of time in job, route taken
4. new methods from observing someone else – could be from appraisal observation, from team teaching experience or from observing from time as graduate teaching assistant
5. own experience of being taught - was this a positive experience or negative? What sort of words are used to describe the experience?

**Table 3.10: Teaching influences – initial categories**

**Technology use**

This category aimed to understand the reasons for technology use. Those shown in Table 3.11 reflect what I found in the literature.

Technology Use (TU)
1. department policy – evidence that the department has made a commitment to the use of C&IT in teaching and learning
2. increase in student numbers - not able to provide one-to-one help
3. wants to provide course to a wider audience - may include distance element
4. to give IT skills to students - transferable skills
5. to present materials more professionally - e.g. use of PowerPoint, notes on the Web
6. to give students discipline specific skills – research skills, use of software appropriate to discipline
7. because subject is computer based - for example programming
8. wants to improve learning experience for student - this may include elements listed above under teaching, as rationale
9. to provide students with experiences not available otherwise - this includes virtual reality and simulation
10. to promote discussion and collaboration
11. to provide access to information and data otherwise inaccessible

**Table 3.11: Technology use – initial categories**

The use of ICT is presented as a way to overcome the increase in student numbers, as a way of providing the course to a wider audience (expansion into distance education, or to support part-time students) and as a way of providing students with transferable skills such as IT skills. Other more obvious reasons for technology use may be because the subject requires it (for example computers are used for programming in computer science or software packages are used to teach statistics in psychology) or to present materials more professionally (for example, the use of PowerPoint presentation software in lectures). The technology may be used to provide simulations of inaccessible situations or to give students access to real research tools such as online census records.

***Technology environment***

This category was intended to classify elements in the IT environment that interviewees identified as inhibiting technology use, such as access to equipment, the availability of training and support as well as the IT literacy level of students and staff. Those shown in Table 3.12 reflect the literature and some of the barriers I expected to find.

Technology Environment (TE)
1. aware of limitations of environment (make a note of reasons) – lecturer aware of a number of tools in the environment they are using, has made choice to use specific tools or aspects of a VLE have been chosen, aware of limits / shortcomings
2. score of own IT literacy - will affect attitude to use, but all enthusiasts; comments relating to own skills limiting use and why might want to do something else also
3. suitable IT training available - may make judgement and not attend because not suitable for what required
4. user (lecturer) help and support provided - this is different to technical help and may be as part of teaching and learning development strategy of institution or department, all participants belong to institutions that have a commitment to greater use of C&IT in teaching and learning, their use is facilitated by the institution, but support may be absent
5. guidance provided for course design in the new environment
6. technical support available / IT environment robust - use curtailed by doubts about network connections

7. colleague use (leading to student expectation) - custom and practice in department or across institution
8. access issues for materials / the system off campus - awareness that there may be issues for students, such as cost of time online (so don't use video clips in materials or suggest that these materials are viewed on campus), create back up strategies for vital access to materials
9. access issues for materials / the system on campus - aware of problems that students face in getting access to equipment / printing off materials needed / accessing system e.g. lab space, passwords
10. student IT literacy - comments about this helping or hindering, assumptions made, lack of skill has affected use, what is being done to gauge the skill level?
11. time spent preparing materials (updating etc), does this inhibit use – prevents speedy development

**Table 3.12: IT environment – initial categories**

The rationale behind the analysis framework was that it would enable me to identify comments and statements from each interviewee that would help me begin to answer the research questions: to understand the use of VLEs in higher education and whether they were changing anything lecturers did. However by sticking too rigidly to the possible contents of these categories, shown in the above tables, data that did not fit (or issues that were raised by the interview) could be forgotten or ignored. Wellington (2000) suggests that the most rational approach to analysing qualitative data uses a mixture of pre-established categories and those derived from the data. I found it necessary to add to, revise and refine the sub-categories. The way in which they evolved and what this told me is described in the following section.

**3.4.2 Developing the categories**

I created word processed, summarised accounts of the interviews from the notes taken during and after the interview. I listened to the audio taped records to clarify comments and to check these notes. The interview guide was used to structure the notes so the summaries were not linear records of the interview narratives or verbatim transcripts; they



were organised in terms of interview themes or question areas and written in note form. One of the shorter sets of notes is included in Appendix C (Part One - Example interview record).

Full verbatim transcripts were not produced because of time constraints<sup>29</sup>. Later when it was found that more comprehensive accounts were needed, to obtain accurate quotes, so that interviewees' meaning could be better understood, some time was spent extracting quotes from the audio recordings. In hindsight it would have been better to produce full transcripts from the beginning as the method used risks omitting data which did not fit into the four categories. This was another lesson learnt for the design of the main study: to include adequate time for processing any data collected so that transcripts could be prepared for each interview.

I read the summary accounts several times, by university group, beginning with interviewees from University A, as the group that represented my desired university sample more fully: one from each subject area (two from social science), all using a VLE, plus a context interview. I highlighted elements that corresponded to facets of the data categories and manually coded them with the letters corresponding to the categories (TM, TI, TU, TE) and the number of the particular sub-category.

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<sup>29</sup> It has been estimated that one hour of tape can take from five to twelve hours of time to transcribe (Bell, 1999; Hammersley, 2001). Even typing up notes takes a substantial amount of time. A complete record of one hour long interview took eight hours to transcribe. It was not possible to devote that amount of time to each interview at that time. The summary approach described was adopted.

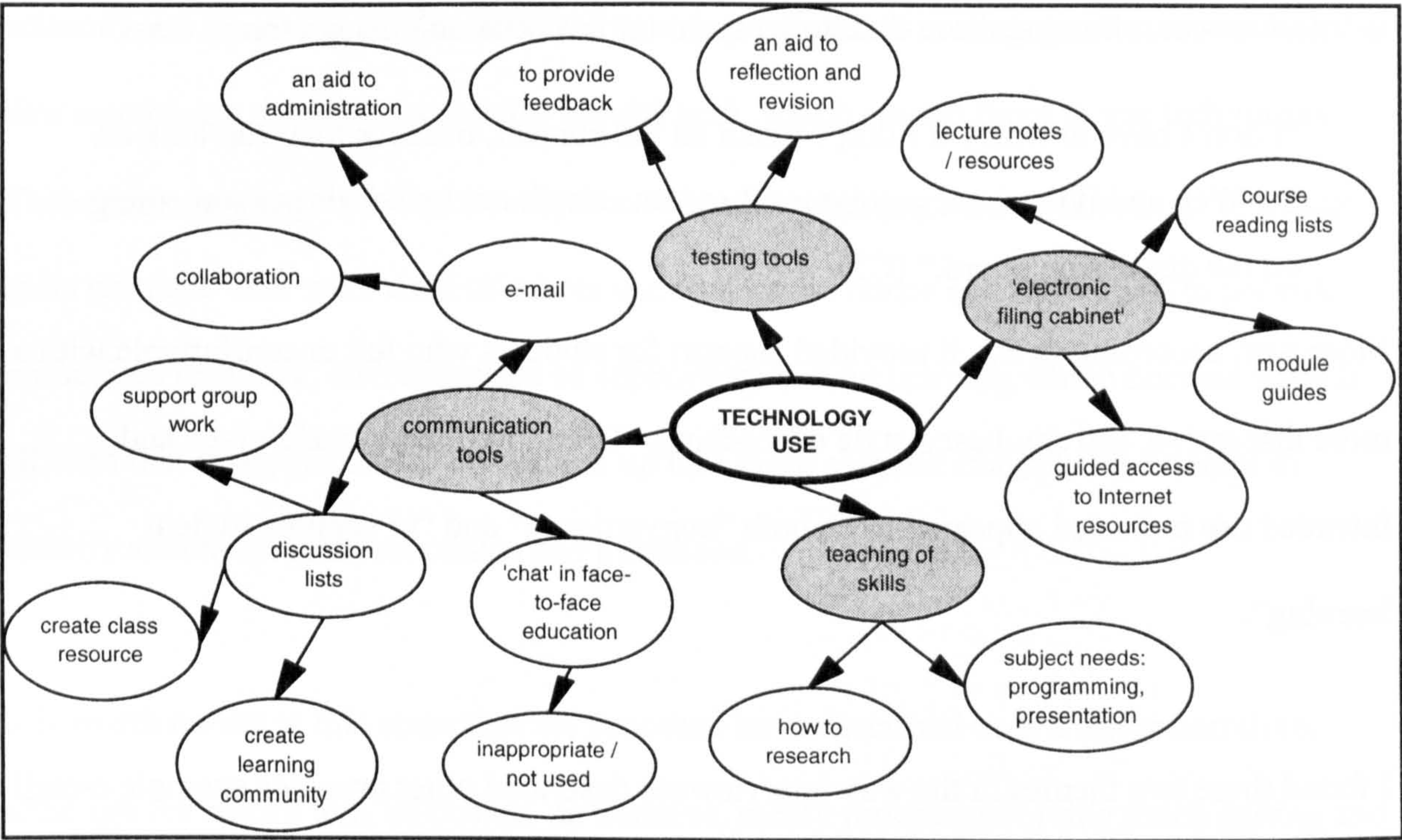
I began to see data that did not comfortably fit into any of these sub-categories, but nevertheless told me something about an interviewee's attitude to teaching and to their students. There were some sub-categories it was difficult to find evidence for or data that fitted into several sub-categories. Therefore I returned to the data (in both note and audio-taped form) and extracted and recorded elements that corresponded to the four overall categories onto a set of spreadsheets. This left me with 'extra' data that I thought might be relevant to the research questions, this was recorded on a further three spreadsheets. In trying to create more workable sub-categories I was guided by the format of the interview guide and the intentions behind the questions asked.

The seven spreadsheets were labelled: lecturer profile, teaching methods, extra items regarding teaching, teaching influences, technology use (what and why), constraints on technology use and concerns & the future. Example data from this intermediary stage is included in Appendix C (Part Two - Sample spreadsheet data) illustrating the way the data was sorted and regrouped. The examples used correspond to the set of interview notes also included in Appendix C.

The next stage was to return to the original sub-categories, to confirm that these did not adequately describe the data collected but needed revising, simplifying and clarifying. Before this happened I returned to the research questions to check what was needed from the data. Therefore in the final part of the process I concentrated on what the data could tell me that would help me answer the research questions, rather than trying to fit it to pre-determined sub-categories. This also enabled me to include issues that interviewees had raised, but that had not been considered when drawing up the initial sub-categories.



One of the outcomes of this process was a change in the focus of two of the categories in line with what it was possible to extract from the data. It was difficult to separate out general teaching methods from those associated with technology use. For example the spreadsheet I created to record “how” and “why” interviewees said they used particular pieces of technology (see Appendix C, Part Two, Technology Use – Spreadsheet Extract) helped me identify the reasons interviewees gave for technology use as well as some of the teaching methods used. Figure 3.4 illustrates the way data from this spreadsheet was extracted and re-sorted to begin to create relevant sub-categories.



**Figure 3.4: Intended technology use**

Interviewees indicated that the majority of use was to display and hold content, administrative information and learning resources, what B2 termed “the electronic filing cabinet”, and to guide access to the Internet, through suggested links. There was a general feeling that the technology should be used for more than creating “an electronic textbook” (B3), but rather “... to do what it does best. I don’t want to put lots of text on the Web.”



(A4) Although in this case “what it does best” seemed to really mean “what I have been told it does best”, because one thing computers can do well is store and share large amounts of information. However the interests of the group promoting VLE use were around ICT use for communication and collaboration, therefore this was influential in the way interviewees at University A in particular thought about use.

Nevertheless the “electronic filing cabinet” had provided a way in for interviewees and visible evidence of their involvement if they were in an institution where use was likely to become a requirement. The availability of online materials had added benefits according to interviewees, allowing more time to be spent on feedback and discussion in class

“I don’t have to worry if I don’t finish all the content, because they can look on the Web and if there are any issues they can raise it next week or put something on the discussion board.” (C3)

Moreover, according to B2, it provided support for students who felt uncomfortable with a more discursive, activity-based style of teaching. Therefore the rationale given and intended use indicated appeared to be both “convenience” and “to support student learning”.

I found these two themes in the way interviewees described other uses, for example e-mail was used to keep in contact with students (convenience), to clarify subject matter or help with assignments and to connect dispersed group members (supporting student learning). Although much of the discussion forum use was described as intended, rather than actual, interviewees said a forum was and could be used to support group work and to create a learning community by encouraging peer support, discussion and the sharing of ideas. A forum had the added advantage of making communications visible to all, which meant, in theory, that queries could be dealt with once (B2 and D1). Again this indicated a supporting student learning reason, but by looking more closely at why interviewees said

they used peer support it transpired that this was because they had no time for one-to-one support (A1 and A2). This indicated that increased student numbers might be a reason for use. Only one interviewee (C3) used the synchronous ‘chat’ tool, to support a revision session with part-time students. Use had not taken off elsewhere because of the ability to meet face-to-face, which had made it redundant (A2). Interviewees said they needed to think about appropriate use.

There were discipline differences in the reasons given for technology use. For example interviewees had to teach students subject specific skills such as programming (computer science) and the use of ICT in the classroom (education), as well as generic research skills like searching a database (across the disciplines), which caused them to use technology. These reasons were classified as subject need and supporting student learning. The quiz tools within a VLE were used to encourage students to revise and reflect and to provide immediate feedback, also classified as supporting student learning which became a catch-all term that really needed to be divided up into more specific examples to attempt to classify student-centred rationales and intentions.

It is worth noting at this stage that the process I have described uses a linear narrative, although the reality was, of course, an iterative, messy process involving much sorting and re-sorting of data. The following section describes the sub-categories that came out of this process and discusses some of the implications for the design of the main study.

### **3.4.3 The analysis framework re-conceptualised**

The four overall categories (teaching methods, teaching influences, technology use and technology environment) remained, although the focus of two of them did change as outlined above. It was difficult to separate out general teaching methods from those associated with technology use, so the “teaching methods” category included reference to



both. As a consequence the revised “technology use” category concentrated more on the reasons for technology use (“why” rather than “how”). The revised categories arising from the data are described below.

### ***Teaching methods***

I aimed to find evidence of the use of student-centred methods in conventional, face-to-face teaching, whether it had been possible to support student-centred methods with the technology available and whether the technology had been used to facilitate the use of student-centred methods. However, it turned out to be more difficult to capture and categorise teaching methods used than at first imagined and the teaching methods used generally became mixed up with teaching methods facilitated or supported by technology use. This made it difficult to identify a particular strategy and any changes that may have occurred.

I hoped that interviewees would talk in terms of some of the elements identified in the constructivist framework (Table 3.9, page 89). However, in order to avoid them thinking that a judgement was being made about their chosen teaching methods it was necessary to ask very broad and open-ended questions. As a consequence interviewees spoke a lot about what they thought their role as a teacher was, their teaching philosophy and what the student had a right to expect. They explained their methods in terms of lecture, seminar, workshop, tutorial and so on which made it difficult to classify their comments in terms of the constructivist framework drawn up. This might have been because of the prompts I used that, in order to guide them, meant I asked what they did in a lecture, seminar, tutorial or workshop.

Further probing indicated that the terms used might not tell me much about the teaching approach adopted. The term “lecture” was one such case; it was used to indicate a block of



time in which a number of approaches might have been adopted, depending on the context. For example, all but one (B1<sup>30</sup>) of the interviewees at universities A, B and C talked about questioning the students, checking understanding and encouraging students to ask questions in lectures, which indicated less passivity and perhaps a desire to encourage reflection. Furthermore interviewees were eager to illustrate their awareness of criticisms of “the lecture” and their use of more active approaches. A1 talked of “engaging with the students as opposed to delivering content” and B2 spoke of the teaching situation as “... an occasion on which you’re communicating with students ... two way process.” Two interviewees described the use of activities in lectures, preferring to talk in terms of group work (B3) and workshops (C3). Interviewees also spent a lot of time talking about their conceptions of teaching, what they thought their role as a teacher was and what might affect their teaching.

Seeking explanations of terms they used, such as “interactive” and “engagement”, and examples of activities took up a large proportion of the interview and it was difficult to understand which of these activities involved the use of technology and the way this was integrated with face-to-face teaching. Furthermore because I had emphasised my interest in technology use (see page 83) interviewees concentrated on examples of this rather than general teaching approaches. Therefore I decided to try and classify the teaching methods used (whether technology supported or not) in one category, in effect separating out the “how” and “why” of technology use to better understand whether the technology was used to support student-centred approaches or had changed anything that they did. The “how” could be dealt with in this category while the “why” could be classified under ‘technology use’.

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<sup>30</sup> Interestingly, having been taught by B1 I know he does this.

In order to revise the ‘teaching methods’ sub-categories I returned to the literature on teaching and learning and concentrated on constructing my own definition of student-centred teaching and learning which could then be used to create a guide for analysing the data and identifying student-centred approaches. I adopted this particular focus because I wanted to test some of the claims made for Web and Internet-based technology: that it facilitates and encourages the use of student-centred approaches.

Definitions of student-centred teaching and learning are based on the work of Carl Rogers who wrote:

“The primary task of the teacher is to permit the student to learn, to feed his or her own curiosity. Merely to absorb facts is of only slight value in the present, and usually of even less value in the future. Learning how to learn is the element that is always of value, now and in the future”. (1983 p.18)

In summary (CNAA, 1992; NCODE, 2001; Thorpe, 2000) student-centred teaching and learning is about students taking responsibility for their own learning within boundaries set by the teacher, so there is an element of independent or self-directed learning. The teacher acts as facilitator and guide, providing feedback to correct misconceptions and to build student confidence. Students need to learn how to learn and so are encouraged to create their own meaning for material by reflecting on what is learnt and how. Student-centred teaching takes account of a student's prior knowledge and experience (teachers may acknowledge that students know more about a subject than they themselves do) and encourages students to evaluate different solutions or strategies and to select the resources, media and content to use. It is about collaboration and active learning. Assessment is ongoing and informs teaching. This definition enabled me to move away from the constructivist, technology-focused framework (based on the ideas of instructional designers and developers) used previously.



Teaching Methods (TM)	Examples of elements included in category
1. To encourage reflection	Learning how to learn (through drafting and collaboration) Exploration Encouraging student questions Relating what is learnt to their own practice
2. Active learning	Learning by doing / hands on experience Workshop or lab session Contact with experts Expects students to be active
3. Collaboration, discussion, interaction	Discussion, interaction Working in groups to discuss problem set Lessen feeling of exposure Lecture is two way communication vs. delivery of content, provides an opportunity to engage with students, used to provide interaction among students Role play Collaborative writing
4. Evaluation	Different solutions and strategies Select resources / media / content to use
5. Tutor provides feedback and guidance, negotiation	Checks understanding To give confidence Welcome any contributions Questions to support document work Things to look for
6. Tutor takes account of prior experience	Use of prior experience Accept student may know more Starting from where they are
7. Assessment ongoing and informs teaching	Assessment strategy changed to incorporate changes in teaching and learning Feedback and assessments should be the engine that drives learning Assessment provides a way to check understanding Assessment used as a motivator and to "make sure everyone gets past go"

**Table 3.13: Teaching methods**

The seven sub-categories shown in Table 3.13 were created with reference to the definition of student-centred learning outlined above and from the data. The second column shows



the types of comments that were considered to indicate the student-centred approach listed in the first column. Some of the examples given could be considered more student-centred than others, for example “checking understanding” could mean picking a correct answer to match what the teacher said (this would be closer to a transmission approach, associated with a teacher-centred focus, but include elements of guidance). Whereas a student encouraged to reflect on what has been learnt and articulate their own understanding would be closer to a developing and changing conceptions approach, associated with a student-centred focus.

***Teaching Influences***

The sub-categories listed in Table 3.14 describe the influences on teaching methods identified by interviewees. I added to and consolidated the pre-determined sub-categories rather than subjecting them to a wholesale revision. The data did not show any discernible pattern regarding the amount of experience interviewees had, as this ranged from 18 months to 36 years. However, they did seem to have an interest in innovation and in improving their practice. Five of the twelve interviewees (A2, B3, D1, D2 and D3) had undertaken some form of teacher training. Seven of them (A1, A3, B2, B3, C2, C3, D2 and D3) had a responsibility for or interest in teaching and learning or in the use of technology to support teaching and learning.

Teaching Influences (TI)	Examples of elements included in category
1. Teaching and learning interest	Research; Teacher of teachers i.e. involved in teacher or lecturer training; Undertaken teacher training (all cases were voluntary so indicates interest) Reference to literature / theories; Reference to notions of good practice
2. Student feedback	Institutional (only including those who say that this has made a change - many are disparaging of institutional evaluation forms) Self-instigated; Informal (chat in coffee bar, approached by students, asking students how things are going) Reflective practitioner – open to changing things
3. Experience	Teaching experience (learning by doing!); Own experience of being taught; Observing others (formally or informally); Sharing experiences
4. Technology use	Use of technology made a lecturer rethink what and how they taught: to change material for the students - less dense and enabled less transmission and more interaction Think about how students read / deal with information
5. Class context	Fits teaching methods to students and content Gender (e.g. whether men are in the group – Women's Studies) Size – groups used to split large groups Numbers - transmission with larger groups Time allocated, different methods used in large blocks of time or at different times of the day Amount of control over changing class timing / structure ... Level of class i.e. undergraduate, postgraduate affects lecturer expectations of students' ability to take responsibility for their learning and for the need to transmit a body of knowledge, some concern about ability of "today's students" to take responsibility for own learning
6. Subject need	Need for practical session because of subject content e.g. computer science or to provide experience of use e.g. humanities, social science, education (familiarisation sessions) Need to encourage discussion → use of group work / team working
7. Institutional ethos	Department / School custom and practice (e.g. lecture + tutorial + workshop, team teaching); Encouraged to try different strategies; Institution encouraged traditional teaching format / mix i.e. lecture / seminar

**Table 3.14: Teaching influence**



Technology use

Table 3.15 describes the reasons interviewees gave for the use of Web and Internet-based technology and the available VLEs, the second column shows the way interviewees spoke about their reasons for use and illustrates how their comments were sorted into the sub-categories created.

Technology Use (TU)	Examples of elements included in category
1. Increase in student numbers	Peer support because no time for one to one Large numbers all needing to be assessed New intake, new market: Part-timers Work based courses
2. Expectation	Actual policy to have minimum module information and generic information Policy to have course presence on VLE (colleague use / dept ethos) Availability of equipment, provided therefore used - encourages innovation Everyone else does, therefore students expect it
3. Subject need	Part of subject content Students need ICT related skills for subject Access to resources unavailable otherwise Need for preparation / independent learning
4. Convenience	Supported by University, facilitates assessment management and registration Contact e-mails / keeping in contact Supporting absentees Access to course admin / resources Able to provide more information - photocopy costs Takes less time to put stuff on Web than sorting out photocopies One answer to FAQs - use of Newsgroups for assignment queries
5. Interest	Research interest in technology in teaching and learning Job responsibility Not wanting to be bamboozled ICT literate, using it anyway
6. To enhance the quality of teaching	Presentation Better use of time - help those who need it while others work on / if students do prepare can use seminar time more constructively Less pressure to cover all topics - can stop for discussions Demonstrations



7. To support student learning: enhance the quality of learning / improve learning experience	<p>Study skills (e.g. VLE as a personal information manager)</p> <p>Access to (extra) info and resources (more than available ordinarily e.g. re-versioned lecture notes &amp; exam papers free via the VLE, cost from library)</p> <p>To encourage students to self-support</p> <p>To support different learning styles (e.g. to provide privacy and security while working through activities, for those who cannot cope with discursive classes)</p> <p>To extend learning outside class time (e.g. because face-to-face time is not enough, to support part-timers and preparation for contact time)</p> <p>To encourage new ways of working / to afford new experiences (e.g. to improve critical reading skills, to provide real life examples, “more interactivity” )</p> <p>Collaboration, discussion and sharing</p> <p>Exploration</p> <p>Reflection and revision and checking understanding (e.g. students can return to material that they did not understand)</p> <p>Facilitate group work</p> <p>To create a class resource (based on student contributions or model solutions provided by lecturers)</p> <p>To give feedback</p>
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**Table 3.15: Technology use**

One interviewee (A1) suggested that I might find five reasons for use: teaching and learning effectiveness, to extend access, cost effectiveness, external demand and internal demand. Most interviewees had multiple reasons for technology use, some of which arose from initial use and so could be described as post-hoc rationalisations. Cost effectiveness was only mentioned in terms of not having to provide photocopying, although interviewees did find a VLE useful for overcoming shortcomings in the teaching environment. Internal and external demand was classified as expectation.

As far as teaching and learning effectiveness was concerned interviewees certainly appeared to be using the technology to help them do their job, ‘convenience’, as well as ‘to enhance the quality of teaching’ and ‘to support student learning’. Their technology use could generally be described as exploratory, based on their understanding of what the technology was capable of or suitable for, sometimes driven by subject need, sometimes by interest. They seemed to be motivated by a mixture of reasons including perceived pedagogic benefits and because they felt under pressure so supporting students with technology helped alleviate this pressure. It was possible to see some overlap with “teaching methods” and intended uses that could be identified as student-centred.

### ***Technology environment***

The sub-categories described in Table 3.16 show the factors interviewees identified as inhibiting their use of Web and Internet-based technology and VLEs. It was noticeable that interviewees generally related their ability to use the particular system or tool to their level of ICT literacy (technical reasons) or their ability to identify a suitable use (pedagogic rationale), rather than what could be termed functionality.

Only one interviewee expressed outright hostility to the idea of using a VLE. This was D1, a computer science lecturer, whose reasons were both in terms of usability and subject need. He claimed that “VLEs do not work on all machines”, he was a Unix user, and that students would have to keep relearning the vagaries of different systems. He did not want “to hide the underlying machine from students”. The other computer scientist, B1, did not use his university’s VLE, the reason he gave was that he was already using Web pages, e-mail and a shared network drive to store materials, moving to the VLE would take time he did not have. It was the specific tool, rather than a virtual environment that was problematic for him. However, it was not clear whether this was because he thought

resources needed rethinking or redesigning before they were put into the VLE or whether it was a case of needing time to familiarise himself with a new system.

Technology Environment (TE)	Examples of elements included in category
1. Technical issues	<p>Ability to cope with ICT - literacy level (A2 and D3 thought this was problematic for colleagues), employ someone to do it for you</p> <p>Network / system stability (use of CD-Rom for video clips, connection problems stopped discussion forum use)</p> <p>Technical support staff availability and expertise (general plea for more)</p> <p>Software availability</p> <p>Time to become familiar with technology</p>
2. Pedagogic issues	<p>Finding purposeful use (face-to-face meetings mean bulletin board and chat not used)</p> <p>Need to deal with student motivation - phase in</p> <p>Subject expert needed</p> <p>Encourages new way of working - need time to revise and update materials</p>
3. Institutional issues	<p>Managerial support useful (positive attitude, resources, money, time)</p> <p>Dept / School ethos (i.e. colleague ICT literacy and use affects what students expect - few users causes isolation)</p>
4. Student issues (identified by lecturers as possible inhibitors)	<p>Cost of access for student (ISP costs for home use) &amp; printing (if all resources are Web-based, no handouts)</p> <p>ICT literacy level (need to provide support and training, not as competent as often thought)</p> <p>VLE registration changes take time</p> <p>Inability to gain access at work - part timers</p> <p>Not enough machines</p>

**Table 3.16: IT environment**

All of the interviewees (except A4 who had employed a Web developer to create her online course) had created Web and Internet-based resources themselves either using the tools within a VLE or Web authoring software such as Front Page. All the interviewees used Web and Internet-based technology; this was one of the criteria for participation. A1,



A2, A3, A4, B3, C2, C3 based thhir use on the VLEs available in their institution. B2 used a mixture of Web pages and VLE. There was no VLE available at University D.

The results of the data analysis, issues identified and problems encountered enabled me to review the research design and refocus the research questions prior to moving on to the second stage of the research. The following section explains how this was done.

### ***3.5 Outcomes and implications***

The aims of the pilot study were to determine whether an investigation into the use of VLEs would be feasible and the focus of the research questions was suitable, as well as informing the design of the main study. Section 3.5.1 examines the feasibility of the research based on pilot study data. Section 3.5.2 outlines the problems encountered while trying to answer the research questions and the implications for the design of the main study and the research questions themselves.

#### **3.5.1 Feasibility and interviewees**

The aim of this research was to understand the way VLEs were used in face-to-face higher education. The focus of the research was the individual lecturer using a VLE to support face-to-face teaching and learning. An objective of the pilot study was to assess the feasibility of conducting this research. It did appear to be feasible because of the large amount of investment in VLEs throughout the tertiary sector and I had been able to find

lecturers using VLEs who were willing to be interviewed although it was clear these were mainly innovators and early adopters<sup>31</sup> (Zemsky & Massy, 2004).

According to a UCISA survey between 1997 and 2001 there was an increase in institutions with a VLE from 7 to more than 40 (Jenkins et al., 2001). Of those interviewees who had access to a VLE (at universities A, B and C) all but one used a VLE (8 out of 9). I found that interviewees were more likely to use a VLE if it had been adopted by their university and was presented as the preferred way to support student learning. Three-quarters of the interviewees (8 out of 12: A1, A2, A3, A4, B2, B3, C2 and C3) used the VLE available at their university as well as other Web and Internet-based technology such as e-mail. A quarter (4 out of 12: B1, D1, D2, D3) used Web and Internet-based technology only. Three of these, those at University D, did not have access to a VLE.

Pilot study interviewees had been selected for two reasons: they used Web and Internet-based technology to support their students and they taught in one of the three subject areas

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<sup>31</sup> “The innovators, who represent the first few percent of the eventual user population, seek out and experiment with new ideas – often driven by an intrinsic interest. They are the pioneers, must endure many trials and tribulations. Their role is to determine how to use the new product or service and demonstrate its potential value.

The early adopters, roughly the next 15 percent of users, are moved to adopt once the innovators have proven the concept. They usually are tightly connected to others in the field and often are viewed as opinion leaders. Early adopters seldom consider themselves to be pioneers, but rather as hard-headed decision-makers who pursue the innovation for extrinsic rather than intrinsic reasons. But because they participate in the fluid stage of adoption, before the dominant design has become established, they shoulder substantial risk. One of the early adopters’ principal contributions to the emergence of a dominant design is their success at finding alternative ways to exploit the innovation and to test their alterations under normal conditions of use.”

(Zemsky & Massy, 2004, p. 9)



(education, computer science and humanities / social sciences). The rationale behind the subject choice was explored earlier (Section 3.3.2), but I found differences in the way Web and Internet-based technology was used, with respect to discipline area, that made comparison difficult.

I therefore decided to concentrate on the use of VLEs by lecturers in the humanities and social sciences. There were two specific reasons. Based on pilot study findings I thought I was more likely to find a VLE being used as a tool to support learning within this category of lecturer, rather than learning about or how to use the technology as an end itself. The main reason for computer science use was that the students had to be given experience in using the technology. This was also the case with education interviewee B3 who talked about “developing skills”. Education interviewee A4 on the other hand used the VLE to support students mainly at a distance because expertise on a particular area had led to a need to offer a course to more students across the country. Secondly, and possibly because there was a wider pool of potential candidates to draw from, it had been easier to find willing participants from each university approached in these subject areas.

### **3.5.2 Reviewing the research questions**

Reviewing how far I had been able to answer the research questions, using the data collected, was another way forward. The original research questions were:

- Can Virtual Learning Environments support student-centred learning and how does the functionality of the system affect lecturers?
- What are motivating factors for lecturer use of Virtual Learning Environments and what prevents their use?
- How are lecturers using Virtual Learning Environments, what methods are they using, and how does this fit into their overall pedagogy?



I found it particularly difficult to answer the first question using the interview data collected because of the reasons explored above. I could give a partial answer, but needed to understand more about the teaching approach adopted by interviewees when using a VLE and the intention behind their use. Moreover the functionality of a VLE did not seem to cause interviewees problems; rather they attributed any difficulties to their own inability to use ICT or to their inability to identify suitable use.

The second question was answered by parts of the 'technology use' and 'technology environment' categories. This suggested that the question needed to be simplified so that both motivation and barriers to use could be identified separately.

The third question was partially answered by data classified by the 'teaching methods' category, but I needed more information and the main difficulties with the pilot study had been in the development of this category. The structure of the interview meant that lecturers spent too long talking about how they taught and their conceptions of teaching than they did about the way they used the technology, and how this fitted into their teaching in general. This made the data analysis difficult and suggested the need to concentrate on a specific example of VLE use, so that this could be explored in more depth in order to try and understand the approach taken. Concentrating on one example of use would also make it easier to obtain participants. Most interviewees for the pilot study had only been able to speak about one example of VLE use. This change helped with another possible shortcoming in the research design.

I had decided not to observe lecturers teaching due to time and access constraints on the overall study and for practical reasons. Observation of each lecturer teaching followed by

an interview exploring their understanding of the way they taught and the methods used could have provided rich information about their approach to teaching in the context observed. However, I would still have had to rely on their account of the way in which VLE use fitted in with this, as much of the technology use was to support or encourage student learning outside contact time. Moreover what I was interested in was their perceptions of the context in which they taught and the way in which VLE use impacted on this. Negotiation of access was a lengthy process involving reassurance and the stipulation that I would only need an hour of their time and my aim was to obtain a broad sample of those using a VLE to support their teaching from across the higher education sector.

This meant I was reliant on what they told me about the teaching methods they used and needed some way of checking what they described. Research relating to lecturers' conceptions of teaching indicated that there is a disjunction between lecturers' conceptions of teaching and their claimed educational practice (Murray & MacDonald, 1997); so even if lecturers say they are using student-centred methods they may not be in practice. The Approaches to Teaching Inventory (ATI, Prosser & Trigwell, 1999, see Appendix D) was developed to identify the approach to teaching adopted in a particular context and would therefore fit with the investigation of one example of VLE use. The use of the ATI as one of the instruments for the main study is explained further in Chapter 4.

The problems encountered in trying to answer the research questions and decisions reached regarding the design of the research suggested that the research questions needed revising. I still wanted to know whether VLE use had facilitated the use of student-centred methods or if a VLE was used because lecturers thought it would help them to use more student-centred methods. The only way of attempting a partial understanding of this was to examine "how" a VLE was used. It had been possible to begin to understand "how" and



“why” lecturers used a VLE through the use of interviews in the pilot study; although I needed some confirmation of the methods they said they used; another reason to use the ATI.

It was still important to examine contextual factors (motivators for and barriers to use) because these might affect the teaching approach adopted and what was attempted by lecturers. Prosser and Trigwell (1997) demonstrated that lecturers who felt that they had more control over their teaching (what is taught and how) were more likely to adopt student-focused approaches. These approaches were affected detrimentally if the class size was thought to be too large, student diversity too great and workload too heavy. Moreover, data from the pilot study indicated that the course level might affect the approach taken. Interviewees had expressed reservations regarding the motivation of some undergraduate students and the suitability or possibility of asking them to be self-directed in their learning, particularly level one<sup>32</sup> students who are just beginning their studies or those meeting a topic for the first time.

This suggested that the research questions should be revised to match what it was possible to enquire about: the reasons behind a lecturer’s VLE use, the way in which they used a VLE and the teaching methods adopted, as well as factors impacting on lecturer use of a VLE. The following chapter describes how the research questions were revised. These

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<sup>32</sup> Levels of study generally correspond to the year of the course: level 1 is first year undergraduate level, level 2 is second year undergraduate, level 3 is third year undergraduate and level 4 is Masters level



new areas for enquiry were used to facilitate the creation of a new interview guide and to focus the remainder of the research.

## **Chapter 4: Collecting and analysing the main study data**

The purpose of this chapter is to explain the workings of the second part of the research.

Section 4.1 explains the use of the Approaches to Teaching Inventory (ATI). Section 4.2

illustrates the way in which the pilot study findings were reviewed and the areas for

enquiry, identified at the end of the last chapter, were used to create a preliminary set of

interview questions and prompts. These were used to conduct a short trial study when it

was also possible to try out the administration of the consent form and the ATI. Section

4.3 describes the way in which the areas for enquiry were used to create the new research

questions and how the main study questions were developed following the trial study.

Section 4.4 explains the conduct of the main study, including the way the participants were

identified. Section 4.5 details the analysis of the trial and main study data.

The aim of this research was to understand how lecturers used VLEs to support teaching

and learning in face-to-face higher education. I began, through the pilot study, by

enquiring why and how lecturers used Web and Internet-based technology, and VLEs in

particular, to support face-to-face teaching. The aim was to examine one of the claims

made for this technology, whether it facilitates or encourages a student-centred approach to

teaching and learning. The design of the pilot study made it difficult to test this claim and

to identify the teaching methods supported by VLE use. Nevertheless the outcomes

suggested a way forward that involved the revision of the research questions, a change in

the types of lecturers interviewed and the use of an additional instrument, the Approaches

to Teaching Inventory (ATI, Prosser & Trigwell, 1999) to help classify the teaching

approach adopted. The following section explains how and why the ATI was used.

## **4.1 Using the Approaches to Teaching Inventory**

Data from the pilot study indicated the need for an independent way of classifying a lecturer's conceptions of teaching. Murray and MacDonald (1997) warn about "The disjunction between lecturers' conceptions of teaching and their claimed educational practice". It had been difficult to categorise and understand what interviewees meant when they talked in terms of teaching methods such as lecture, seminar, tutorial and workshop. It became apparent that these methods meant different things to different people and in different situations with the same person<sup>33</sup>. Some activities that could be categorised as being student centred were mentioned such as peer learning and collaboration in group work and the use of "buzz" groups<sup>34</sup> and questioning in lectures to aid and encourage understanding. However, without observing what was happening in these classes it was difficult to see whether what interviewees said they were doing was actually what they were doing. Observation was not used as a method of data collection, as explained in Chapter 3 (p. 111).

In addition there was a portion of data in which interviewees talked about their understanding of their role in the learning process that was equally difficult to classify with respect to the categories I created. Nevertheless it seemed to indicate a certain orientation

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<sup>33</sup> Something noted by Gibbs in his review of the research on student learning presented at the 10<sup>th</sup> International Symposium on Improving Student Learning: "There is no simple one-to-one mapping of teaching techniques to approaches to teaching: for example it is possible to be student focused about lecturing." (Gibbs, 2003, p.15)

<sup>34</sup> A small group activity, typically within a large group, in which students work together on a short problem, task or discussion. So called because of the noise the activity generates. (Fry, Ketteridge, & Marshall, 2003, p. 433)



or predisposition to adopt a particular strategy. Examples of this type of data included comments such as:

“I see the role of the lecturer as being about adding value to learning. So we don’t provide information we point students towards information, encourage them to engage with it and then add some value to it, add a different dimension”. (B3)

As well as those where interviewees reflected on the impact on students of the way they taught:

“Creating Web pages has made me think about how students will use it ... become less complacent and get more feedback ... With the conventional way of teaching I didn’t feel the need to provide information about how to handle this stuff.” (D2)

A2 said that teaching was “ ...about persuading people they are better than they are” and half of the lecturers spoke of the affect of students’ confidence on their teaching (A2, B1, B3, C3, D2 and D3).

Research has shown that a lecturer’s conceptions of teaching will affect their educational practice (see Kember, 1997, for an overview). One of the thirteen studies reported by Kember was the development of the Approaches to Teaching Inventory (Trigwell, Prosser, & Taylor, 1994). The ATI evaluates lecturers’ conceptions of teaching, with reference to a particular context, in order to indicate what their approach to teaching might be in that context. It was developed to explore the relationship between the approach to teaching of a lecturer and the approach to learning of their students (Trigwell & Prosser, 2004). For this reason the ATI is usually used in conjunction with an inventory exploring the approaches to studying of the students, to investigate whether there is a correlation (Trigwell et al.,

1999)<sup>35</sup>. It has also been used to examine the effect of training on university teachers (Gibbs & Coffey, 2004)<sup>36</sup> and of context on teaching approach (Trigwell et al., 1998)<sup>37</sup>.

<p>Approach A: A teacher focused strategy with the intention of transmitting information to students; The focus of the transmission in this approach is on facts and skills. The prior knowledge of students is not considered to be important and it is assumed that students do not need to be active in the teaching process – they will learn by receiving the transmitted material.</p> <p>Approach B: A teacher focused strategy with the intention that students acquire the concepts of the discipline;</p> <p>Approach C: A teacher/student interaction strategy with the intention that students acquire the concepts of the discipline;</p> <p>Approach D: A student focused strategy aimed at students developing their conceptions;</p> <p>Approach E: A student focused strategy aimed at students changing their conceptions.</p> <p>This approach is one in which teachers adopt a student-focused strategy to help their students change their worldviews or conceptions of the phenomena they are studying. Like Approach D, students are seen to have to construct their own knowledge, and so the teacher has to focus on what the students are doing in the teaching-learning situation. A student-focused strategy is assumed to be necessary because it is the students who have to re-construct their knowledge to produce a new worldview or conception. The teacher understands that he/she cannot transmit a new worldview or conception to the students.</p>
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**Table 4.1: Approaches to teaching (Trigwell et al., 1994) and (Trigwell & Prosser, 2004)**

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<sup>35</sup> Trigwell et al. found that teacher focused approaches to teaching were associated with students’ reproducing orientations (1999).

<sup>36</sup> Gibbs and Coffey found that “Training can increase the extent to which teachers adopt a Student Focus (as measured by the ATI (2004, p.98).

<sup>37</sup> Trigwell et al. (1998) found that conceptual change / student focused approaches related positively to perceptions of a manageable workload, some control over what is being taught, a manageable class size and small variation in student characteristics.

The ATI was developed through a phenomenographic<sup>38</sup> study in which five qualitatively different approaches to teaching were identified from interviews (Trigwell et al., 1994). Characteristics of the two ‘extreme’ approaches, A and E (shown in Table 4.1), were used to create the 16 items on the inventory. Eight items are part of a sub scale describing an approach that is intended to change students’ conceptions or ways of seeing things, through a focus on the student (CCSF). The other eight items form a sub scale labelled information transmission or teacher focused approach (ITTF, Prosser & Trigwell, 1999). The ATI was revised in late 1999 to create a more generalised version that could be used in learning contexts that were more flexible than those it was developed from (Trigwell & Prosser, 2004). This was the version used for this study; it is shown in Appendix D.

“Like students’ approach to learning, the teachers’ approaches to teaching were constituted in terms of the strategies they adopt for teaching and the intentions underlying the strategies” (*op. cit.*, p. 413): the two sub-scales both have items that refer to strategy and intention. On the conceptual change / student focused approach sub-scale four items (5, 8, 15 and 16) refer to the motive of the approach (intention) and four (3, 6, 9 and 14) to the strategy. On the information transmission / teacher-focused approach sub-scale four items (2, 4, 11 and 13) refer to the intention to transmit information and four (1, 7, 10 and 12) to the use of a teacher-focused strategy to achieve that intention. The advice given was not to separate out the scores on these two sub-scales (Trigwell, personal communication).

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<sup>38</sup> Marton describes phenomenography as “... a research method adopted for mapping the qualitatively different ways in which people experience, conceptualise, perceive, and understand various aspects of, and phenomena in, the world around them.” (1986, p. 31)



Coffey and Gibbs point out that “there are a number of reasons to be cautious in the use of the ATI” (under review). These include the context of its original development (Australia and undergraduate science teachers), the reported disjunction between conceptions of teaching and claimed educational practice (Murray & MacDonald, 1997) and the fact that there has been “no corroborative evidence of the significance of teacher’s conceptions in the form of other measures of teaching obtained in parallel with the ATI” (Coffey & Gibbs, under review). However they also claim to have validated it for use in the UK context (ibid.) and Trigwell and Prosser (2004) argue that these results together with those from two other studies further demonstrate the validity of the ATI. That is, it shows the predicted relationship between teachers’ approach to teaching and their students’ approach to learning.

Other criticisms levelled at the ATI include those from Meyer and Eley who expressed worries about the way the ATI was developed: “... it is a peculiarity of phenomenographic analysis that an entire ‘category of description’ can legitimately be based on a single voice.” (2003, p. 5). They found “... the ATI framework to be conceptually limiting ...” and the two-dimensional model “... too simplistic ...” (op cit., p.8). However Trigwell has previously explained that the nature of phenomenography is that it “... is a relational second-order perspective, that ... aims to describe the key aspects of the variation of experience of a phenomenon rather than the richness of individual experiences, ... [as such] it yields a limited number of internally related, hierarchical categories of description of the variation ...” (2000, p.75) that in this case provide an indicator of the approach to teaching adopted in a particular context.

Kember (1997) too reviewed the creation of the ATI, along with twelve other empirical studies in to the conceptions of teaching of university academics. While he reported a high

degree of commonality in the findings he expressed concerns in relation to the creation of descriptive categories generated by the qualitative and phenomenographic research methods used. He acknowledged that “Establishing categories is a useful analytic technique for reducing a mass of data or individual descriptions of the subjects' perception of a phenomenon. [... but pointed out that] Categories need to be characterised as distinct from each other which creates the, perhaps unintended, impression that there are rigid and well-defined boundaries between them” (1997, 263). This was something considered in this thesis when using interview extracts to illustrate and explain the descriptive categories developed from the interview data collected. The existence of a degree of overlap between the categories was highlighted in both Chapters 5 (p. 185) and 6 (p. 196).

The main focus of this study was on the qualitative data collected however the criticisms outlined above indicate the value of adopting mixed methods to better understand the richness of people's experiences. It does not overcome problems associated with the use of a “second order perspective” though. I hoped to mitigate this by comprehensively explaining my methods and describing in detail the data collected. My intention in using the ATI was to employ it as an independent check on the approach to teaching interviewees adopted, and therefore the likely teaching methods used, as a way of working out whether or not VLEs were used to support student-centred methods. The plan was to examine the interview data in order to explore the way interviewees spoke about their teaching and to compare the two sets of data so that the teaching methods employed when using a VLE could be identified.

The Approaches to Teaching Inventory uses a Likert scale to score teachers' intentions and strategies on a scale of 1 to 5 with 1 being only rarely true and 5 being almost always true. All items are scored positively. Therefore each inventory item has a score out of 5 giving a



total possible score of 40 on each of the two scales. The scales are independent of each other; it is possible to score highly on each scale when describing the same context. Also, as the ATI was developed from research using a relational perspective, it cannot be used to identify an overall approach to teaching, only to explore the way lecturers go about teaching in a specific context. The approaches to teaching categories used to create the ATI were developed from lecturer responses to their experience of one particular teaching context (Trigwell & Prosser, 2004).

Participants were asked to refer to one context of VLE use when completing the inventory, to indicate the level of the course and the subject for which the VLE was used and told that they would be asked more about this specific example in the interview. The development of the interview questions is dealt with in the following section.

## ***4.2 Drafting the new interview guide***

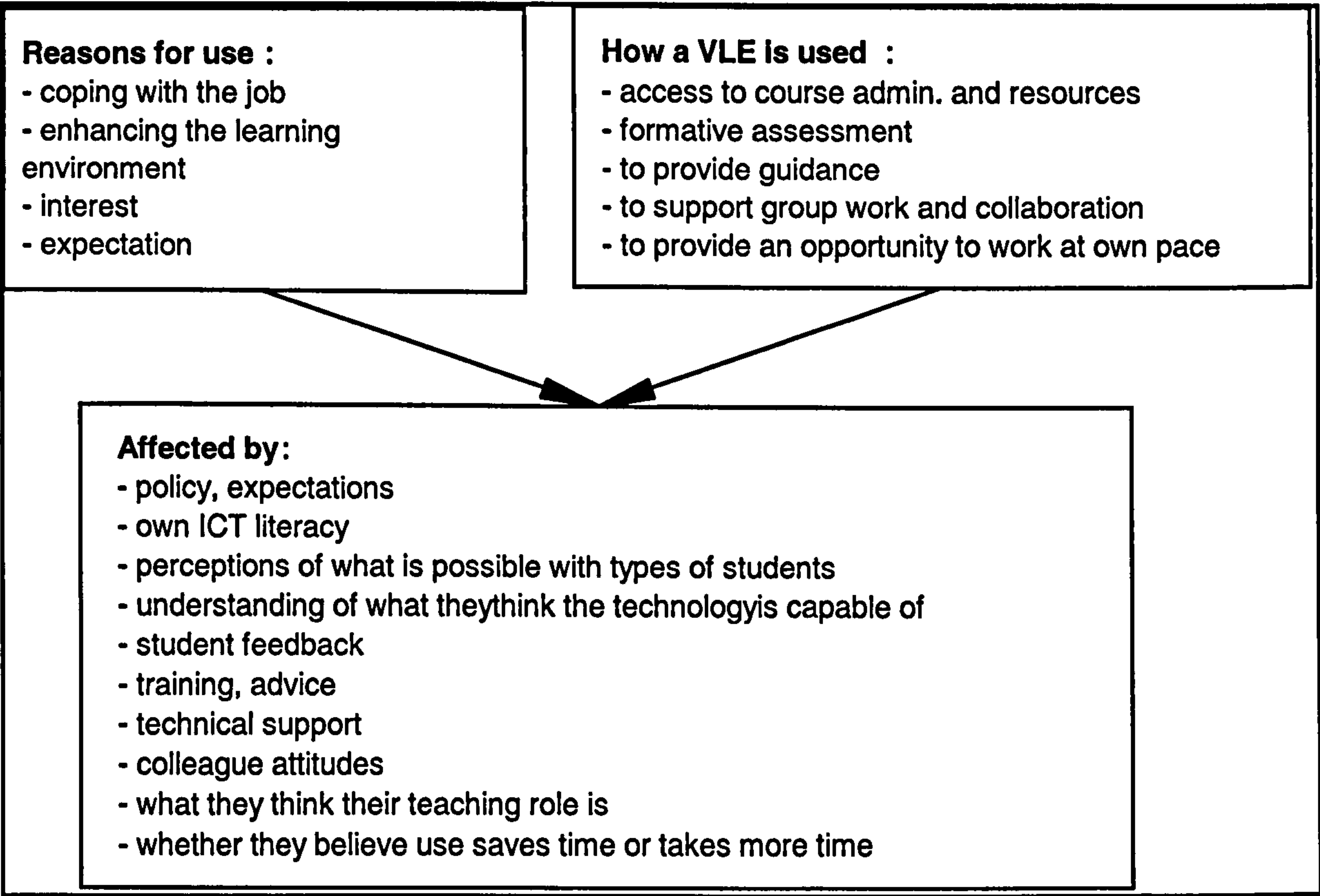
The interview guide used for the pilot study was created with reference to the original research questions and the areas for investigation arising from the literature review. The outcomes of the pilot study concluded that the original research questions needed to be revised, to enquire “why” and “how” a lecturer used a VLE and what “contextual factors” affected that use. It was important to consider the context of use because this might affect whether or not the technology was used as well as the teaching methods adopted.

Prosser and Trigwell (1997) demonstrated that lecturers who felt that they had more control over their teaching (what is taught and how) were more likely to adopt student-focused approaches. These approaches were affected detrimentally if the class size was thought to be too large, student diversity too great and workload too heavy. Data from the pilot study indicated that the course level may affect the approach taken. Interviewees had



expressed reservations regarding the motivation of some undergraduate students and the suitability or possibility of asking them to be self-directed in their learning, particularly level one students who were just beginning their studies or those meeting a topic for the first time.

The areas for enquiry (“why”, “how” and the effect of context) informed the creation of a new interview guide. The first stage in the creation of a new interview schedule involved a review of the pilot study findings; the areas for enquiry were used to sort the findings, Figure 4.1, and a series of questions arising was drawn up, Figure 4.2. These questions were then expanded upon to create a series of supplementary questions, Table 4.2.



**Figure 4.1: Pilot study findings sorted by area for enquiry**

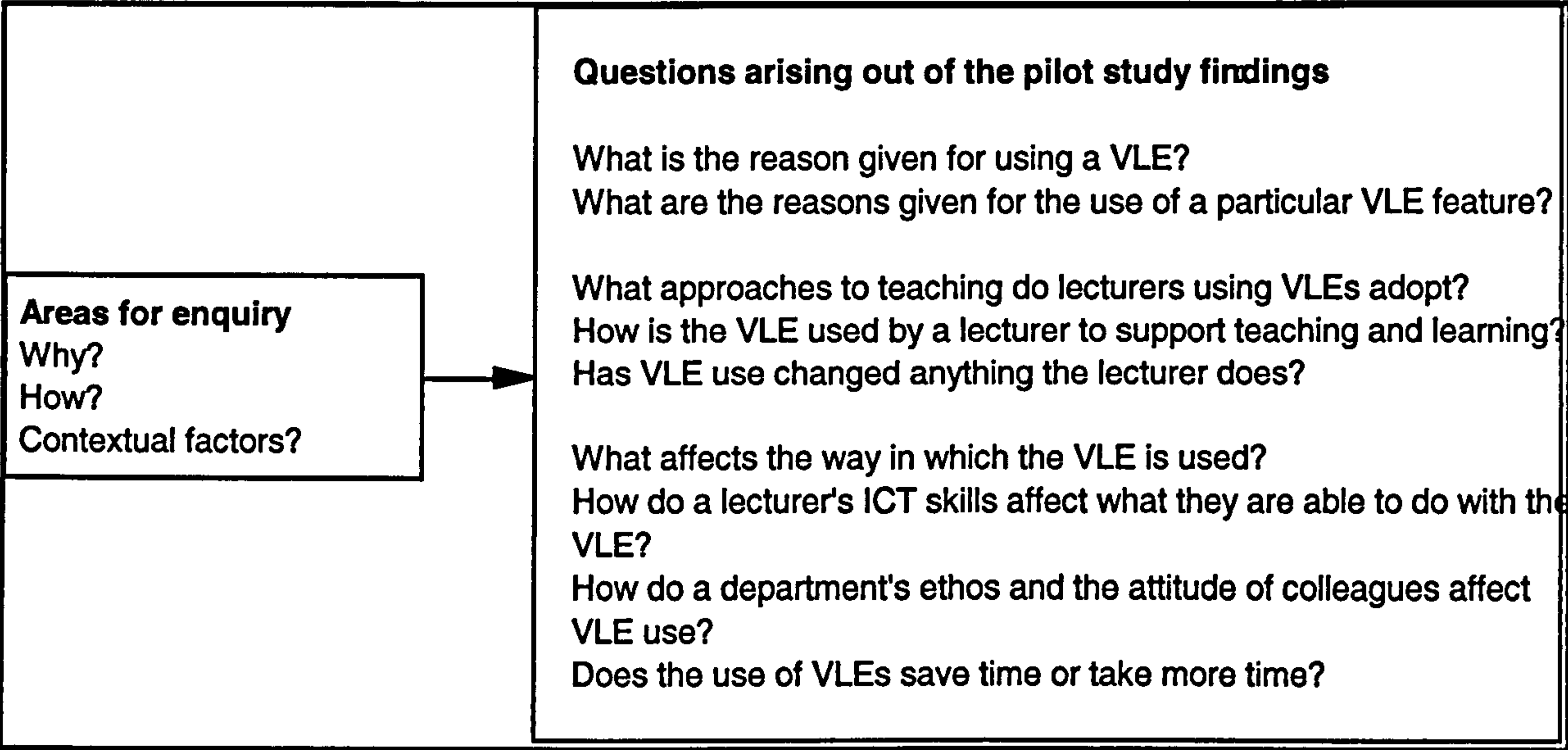


Figure 4.2: Questions arising from the pilot study data – part one

**What is the reason given for using a VLE?**  
Where did the inspiration come from?  
How did the lecturer begin to use the VLE?  
What was the impetus?  
Is there a pedagogic rationale or is it just interest?

**What affects the way in which the VLE is used? / What are the reasons given for using a particular VLE feature?**  
Does this relate to student profile, lecturer ICT comfort level, experience with using a particular tool, teaching / pedagogic need, advice received.  
Are the level of course and type of student more important than the VLE?  
Possible factors - gender, VLE, level of course, length of time using the VLE, subject, type of institution

**What approaches to teaching do lecturers using VLEs adopt?**  
Do the strategies / methods have anything in common?  
Is there evidence of student-centred methods?

**How is the VLE used by a lecturer to support teaching and learning?**  
Is the VLE supporting student centred learning?  
need specific examples to be able to categorise them in relation to TM categories

**Has VLE use changed anything the lecturer does?**  
Was this intended?  
Was it a surprise outcome?  
How have they found this out? Planning & evaluation? Student feedback?

<p><b>How do a lecturer's ICT skills affect what they are able to do with the VLE?</b></p> <p>Are self-taught users the most likely early adopters / VLE users?</p> <p>Does this then tell us something about the barriers to use?</p> <p>Is lack of ICT skills an inhibitor?</p> <p>Do lecturers only use what is familiar and comfortable?</p> <p>Does the advice and support available affect what they are prepared to try?</p> <p><b>How do a department's ethos and the attitude of colleagues affect VLE use?</b></p> <p>Do lecturers feel supported or part of a community of users?</p> <p>Is there a policy driving use or is it just expected?</p> <p>Where is the push for VLE use coming from?</p> <p>Are they lone users or do they have an ICT / teaching &amp; learning role in the Department or School?</p> <p><b>Does the use of VLEs save time or take more time?</b></p> <p>Is the time it takes to prepare, update and manage VLE use a barrier to use or does the convenience of the electronic filing cabinet compensate for that?</p> <p>Do lecturers have time to create and maintain VLE modules?</p> <p>Does VLE use save time? Or are lecturers just using their time differently? If so how?</p>
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**Table 4.2: Questions arising from the pilot study – part two**

The questions in Table 4.2 were sorted to create a preliminary set of interview questions and prompts, listed in the first column of Table 4.3. These were used to enquire about and explore the areas and issues indicated in the second column.

Questions	Areas and issues explored
<p><b>Part 1: Background</b></p> <p>Which VLE?</p> <p>Length of time in use (in University and personally)?</p> <p>Champion / vanguard user?</p> <p>How do other users / non-users feel?</p>	<p>Difference made by a particular VLE?</p> <p>Do lecturers know what a VLE can be used for, do they have a plan of use?</p> <p>Is the type of use affected by the amount of time a VLE has been available or used?</p> <p>Does it take time to embed use into teaching and learning?</p> <p>Is the lecturer part of a community of users, colleague attitudes?</p>



<p><b>Part 2: Motivation / Deciding to use</b></p> <p>Why did you decide to use the VLE?</p> <p>What was your motivation for using the VLE?</p> <p>Where has the inspiration for how you use the VLE come from?</p> <p>How did you begin using the VLE to support your teaching?</p> <p>Has your teaching been affected by VLE use? /Has your use of the VLE changed anything you do in your teaching?</p>	<p>Dept policy / Peer pressure</p> <p>Perceptions of what could be gained by use: personal satisfaction / development</p> <p>Improve learning environment for students – resources, key concepts, extend access - Will save time / effort in the long run. To provide course for new market</p> <p>Pedagogic model?</p> <p>Class structure – time online factored in / replacing something else? Less worried about covering content. More sharing and peer support? Group work facilitated?</p>
<p><b>Part 3: Support / Training</b></p> <p>What help have you been given in using the VLE?</p> <p>What previous experience have you had in: creating Web pages, using e-mail, participating in discussion lists?</p> <p>Where is the push for VLE use coming from (ed. tech / IT services / own dept)?</p>	<p>Guidance for pedagogic use, technical training, peer support, technical help ongoing, express desire to use different elements but not technically expert, lecturers ICT literacy.</p>
<p><b>Part 4: Tools / elements used</b></p> <p>What elements of the VLE do you use to support your students' learning? (remember to distinguish between e.g. given)</p> <p>Tools: e-mail, forum, notice board, Web authoring for content, etc.</p> <p>What are the reasons for use of these elements? Anything particular about their students (ability / level/ language)?</p> <p>Are there other ICT tools that you use, why?</p> <p>Tools don't use / planning to use in future?</p>	<p>Use of particular tools may indicate different approaches to teaching: heavily content led may indicate transmission, although there may be a clear rationale e.g. to allow students to make more informed choice of topics for a project, use of forums or discussion lists may indicate support for peer learning or (if report no activity) lack of thought and integration with learning activities.</p> <p>Choice or direction i.e policy or guidance?</p> <p>Usefulness to students / yourself</p> <p>i.e. does the VLE have a shortcoming?</p>

<p><b>Part 5: Benefits</b></p> <p>Is there any aspect of the VLE or its use that has been particularly useful? Describe it? (N.B. course level)</p> <p>Can you think of an example when the VLE has been of benefit?</p>	<p>Evidence of thought of use / rationale.</p> <p>Encouraged to think of different strategies to use with students (repetition from elements above?).</p> <p>Less time on admin (handing out replacement photocopies), students better informed / more active, easy to update course / pass on course info, key concepts can be revised and tested with ease (self-testing), students self-evaluation</p>
<p><b>Part 6: Drawbacks</b></p> <p>What are the drawbacks for you of VLE use?</p> <p>What has hindered use of the VLE?</p> <p>Could the resources have been better spent elsewhere - more productive for student learning?</p>	<p>Is it imposed?</p> <p>Technical – access, slowness, lack of familiarity, doesn't have the same functionality as stand-alone software ...</p> <p>Cost – time and effort</p> <p>Constraints in the way the system encourages you to organise / display content.....</p> <p>Student IT literacy, access, robustness of system, few staff users so students reluctant ...</p>
<p><b>Part 7: Student opinion</b></p> <p>What has the student reaction been like? (How have you found this out?) (Differences in levels / maturity?)</p>	<p>Evidence of evaluation – depth</p> <p>Are courses at different levels making different use of VLE?</p>
<p><b>Part 8: Change</b></p> <p>Is there anything you do with the VLE, that you would want to change for next year?</p>	<p>Evidence of reflection on practice, pick up any problems, lack of skills, confidence....</p>

**Table 4.3: Questions and prompts used for trial study**

The first column in Table 4.3 lists the questions and prompts created and the second column indicates the areas and issues that were being explored. This first draft was used to conduct a short trial study the purpose of which was to aid the development of the interview guide and to try out the administering of the ATI. The conduct of this trial study is described below.

### **4.2.1 Conducting the trial study**

At the time of the trial main study it was still proving difficult to identify institutions supporting the use of a VLE and to find lecturers within those institutions who were willing to take part in the research. Lecturers working within University B's School of Humanities and Social Sciences had agreed to participate, but were facing reorganisation and possible redundancy. It was suggested that the interviews should be conducted sooner rather than later to be sure of their participation. Two interviewees were identified by the Teaching Fellow responsible for IT (B4) who also volunteered himself. The interviewees were from a range of subjects: B4 – Sociology, B5 – English, B6 – Religious Studies.

As with the pilot study initial contact was made via e-mail (see Appendix F - Sample introductory e-mail for main study). This had proved an effective way of introducing both myself and the research and of answering any queries prospective interviewees had. A letter (Appendix F) was despatched ten days before the interview. It stated the proposed length of the interview and asked that the consent form (Appendix E) and ATI (Appendix D) be completed prior to the interview. The e-mail, letter, consent form and ATI remained the same for the conduct of the main data collection as no problems were identified with the administration or wording of them.

The interviews were conducted on a one-to-one, face-to-face basis and were recorded. Notes were taken at the same time, in case of equipment failure and field notes were recorded immediately afterwards, on the journey home. A full transcription and analysis were not carried out immediately as the aim was to guide the revision of questions for the main study. Therefore the focus was on the way the questions were understood by the interviewee and the way that these could be clarified and focused for the main study.



The conduct of the pilot study indicated a number of things that were reinforced by the trial main study. These included the need to include a question about the role of assessment in VLE use, to be more focused and explicit with questions about ICT experience and to be more direct in asking about the actual reasons for using the VLE and about the training and advice available. The following section explains how the new interview guide was drawn up.

### ***4.3 Revising the research questions and the interview guide***

Once again I began by going back to the areas for enquiry (“why”, “how” and the effect of context) to clarify what I needed to find out. This gave me three sets of areas and issues and enabled me to work on the wording of the research questions, these are listed below. The list under each research question indicates the types of data I expected to find, based on what I had found already in the pilot and trail studies, and indicated possible question or prompt areas:

1. Why do lecturers say they use a VLE?

Rationale and motivation: teaching and learning, student expectation, policy and expectation, personal interest, because ICT literate and user of technology already.

2. How do lecturers say they use a VLE to support face-to-face teaching?

Teaching methods, examples of use and the way VLE use fits into or changes teaching practice, role of assessment, indicators of student-centred approaches, approach to teaching as indicated by the ATI scores.

3. What do lecturers say hinders or supports their use of a VLE to support teaching and learning?

VLE functionality had not been a factor in the pilot study, but I had to consider that as lecturers became more familiar with the technology, they may also become more critical. Personal ICT literacy level, amount of VLE use, length of time VLE used,

contextual factors such as institutional or department policy, training and support available, colleague attitudes, pedagogic advice, student factors (e.g. concern about the effect of VLE use on them, ICT skill levels, types of students, course level, feedback).

The full interview guide is shown in Appendix G. There were eight parts beginning with an introductory section to allow for a sound check (see Table 4.4) as in the pilot study.

It is _____am /pm on _____. I am talking to _____ of _____ University. I would like to start by reassuring you that there are no right or wrong answers, the questions are not loaded. What I am interested in is your opinion and your experience of using a Virtual Learning Environment.
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**Table 4.4: Part 1 – sound check and introduction**

Part 2 (Table 4.5) asked about context while part 3 (Table 4.6) explored interviewees’ ICT comfort level. Difficulties in understanding an interviewee’s ICT literacy level had indicated one way in which the interview should be redesigned: interviewees were asked to give examples of their use of software applications and tools that were relevant to the use of technology to support teaching and to VLE use. For example a word processing package, a presentation package, Web authoring software and computer mediated communication tools. This had worked well in the trial study.

Can you start by telling me which VLE you use? How long has it been available for use in the university? How long have you been using this VLE? + For how many of your courses and at what levels? Why did you start using it? Is there any policy about the use of the VLE? + What is it?
--

**Table 4.5: Part 2 – exploring context**

<p>I am now going to ask about your IT experience in general. Please give me examples of your use in each case:</p> <ul style="list-style-type: none"> <li>• How comfortable do you feel using a word processing package such as MSWord?</li> <li>• What experience do you have in using a presentation package such as PowerPoint?</li> <li>• What experience do you have in writing Web pages?</li> </ul> <p>What experience do you have regarding participation in online lists or discussions?</p>
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**Table 4.6: Part 3 - investigating ICT comfort level**

Part 4 (Table 4.7) of the interview was designed to investigate the type of training and advice available, for example whether there was an emphasis on technical or pedagogic issues, and to identify any problems with the available support or the ethos of an institution that may affect VLE use. I wanted to know whether interviewees foresaw problems as the number of VLE users increased and whether they felt isolated as users and found it difficult to involve colleagues or were part of a community of users. All issues raised by pilot study interviewees.

<p>What training have you had in the use of the VLE?</p> <p>If something went wrong what would you do?</p> <p>Do people ask you for help if something goes wrong?</p> <p>What advice have you had about using the VLE effectively to support your students?</p> <p>Do people ask you for advice about how to use the VLE?</p>
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**Table 4.7: Part 4 – training, support, advice and ethos**

Part 5 (Table 4.8) explored one context of VLE use so that the categories created for the pilot study, in order to identify student-centred methods, could be developed further and a comparison could be made with data collected using the ATI. As outlined above teachers are asked to focus on a specific teaching context when completing the ATI. Interviewees were asked to describe and focus on a specific example of VLE use and talk about the way in which the VLE supported and facilitated the teaching methods used in that particular context. The interview also investigated the particular tools used so that I could gauge



whether a particular teaching strategy was supported by a specific tool. I was still interested in finding out whether the more discursive subjects found in humanities and social sciences did indeed find a use for computer mediated communication.

Now I would like you to think about the particular context that you were referring to when completing the Inventory:

- Can you start by telling me about the students who take this module / course?
- + Is it compulsory or optional? + How many students take it? + What level is it at?
- Will you take me through the way in which the VLE is used in this instance?
- Why did you use the VLE in this way?
- How did you choose which tools to use from the range available in the VLE?
- How does all this relate to the course / module assessment?
- What feedback have you had from your students about this use of the VLE?
- Has the use of the VLE changed anything that you do in face-to-face sessions? In what way?

**Table 4.8: Part 5 - exploring one actual use of the VLE**

One of the questions in part 5 dealt with the relationship of VLE use to assessment because although there had been no questions about the role of assessment in either the pilot or trial studies assessment had been mentioned in relation to VLE use in two ways. Firstly as a way to encourage the use of the VLE and secondly the VLE was used to support preparation for assessment or to carry out tasks relating to assessment. The link to assessment was important because interviewees recognised the need to make any tasks using technology seem worthwhile, because in their experience many students would only take an active role in something if it was assessed or related to assessment. As a result the quiz tools had been used to revise key concepts (A2, B4, B6), the chat tool was used to conduct revision sessions (C3) and activities using discussion lists were used to prepare for classroom discussion (D3). VLE tools were used to support group work (C2 and B5) and the amount of contributions made influenced the assessment grade (C2) and assessment details and other important information was placed within the VLE (A3).

The question about feedback was intended to enquire whether interviewees evaluated what they did and to assess the impact of student opinions. The question about change was intended to help me understand whether VLE use had caused interviewees to adopt student-centred methods. The issue of student feedback and the role of evaluation and reflection on practice were followed up by questions in part 6 (Table 4.9) which also asked interviewees to identify any shortcomings or benefits of VLE use. This provided a further opportunity to follow up on any issues raised earlier about levels of support and the suitability of using a VLE to support teaching and learning in an interviewee’s context.

Do you collect student feedback about your courses? What do you do with this feedback? Have you found yourself using any other ICT tools or software packages to support your teaching? + If so, can you explain why? Is there anything that would help you make better use of the VLE? Is there any feature of the VLE that is particularly useful for your subject?
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**Table 4.9: Part 6 – identifying shortcomings and benefits of VLE use**

Part 7 (Table 4.10) gave interviewees a final chance to raise issues not covered by the interview and provided an opportunity to assess their level of VLE use.

Is there anything about your experience in general with the VLE that you would like to comment on? + Can you give me any more examples of your use of the VLE? Is there anything else that you would like to add?
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**Table 4.10: Part 7 – providing an opportunity to add further comments**

The following section describes how interviewees were selected and who they were as well as the way in which data was collected.

## **4.4 Conducting the main study**

A further twenty-nine humanities and social science lecturers from another nine higher education institutions (HEIs) were interviewed for the main study. Interviewees volunteered (following personal contact at conferences or via an e-mail list request) or were volunteered by colleagues (fellow participants or contacts in educational development and learning technology departments who once again were keen to provide ‘people doing interesting things’). The only requirements were that participants should be humanities or social science lecturers who used a VLE to support face-to-face teaching. The self-selecting nature of the participants has implications for any final conclusions drawn.

I contacted potential participants by e-mail to ask if they would take part in the research. I told them that I was researching the use of Virtual Learning Environments (VLEs) in face-to-face Higher Education and that “my focus is on the way lecturers are applying these technologies and the effect their conceptions about teaching and learning have on the use of technology.” I informed them that the interviews would be recorded and conducted individually and face-to-face, taking no longer than an hour and that I would come to their place of work. I told them that their identity and that of their institution would remain confidential. Once agreement to participate had been obtained they were sent the ATI (appendix D), the consent form (appendix E) and a formal covering letter (appendix F).

I asked each interviewee to complete the Approaches to Teaching Inventory (ATI) with reference to the teaching that takes place in one context of VLE use. I told them that I would collect the ATI on the day of the interview. Most people complied with this request, although 9 had to complete the ATI immediately prior to the interview and one (due to time constraints on the day) completed and returned the ATI at a later date (M2). One



interviewee failed to return the consent form and the ATI, therefore his data was not included.

Table 4.11 shows the number of interviewees from each HEI, as well as the type of HEI (the trial study data is included). My intention was to obtain an even spread of interviewees from the two main types of HEI (pre and post-1992) and of users of a range of VLEs, so that the effect of context could be examined. However, as with the pilot study and the UCISA survey (Jenkins et al., 2001) I found more users in the post-1992 sector, including one college of higher education, and using WebCT.

University code	Type of university / college	Number of interviewees	VLE used
B	Post-1992	3	VLE-B
E	Post-1992	3	WebCT
F	Post-1992	5	WebCT
G	Post-1992	4	Blackboard
J	Post-1992	3	Learning Space & VLE-J
M	College of HE	4	WebCT
H	Pre-1992	2	WebCT
K	Pre-1992	2	Blackboard
L	Pre-1992	2	Blackboard
N	Pre-1992	3	WebCT

**Table 4.11: Interviewees, institutions and VLEs (trial and main study)**

Table 4.12 shows the range of subject areas represented and the interviewees who taught those subjects (once again the trail study data is included). Interviewees were referred to using their university code and a number (for example the first person interviewed at University E was labelled E1).

Subject	Lecturer
History	E1, F2, L1, J1, M1
English	B5, G3, G4, J2
Business studies	F3, F4, F5
Information science	E2, H1, H2
Communication studies	E3, G2
Law	J3, N3
Religious studies	B6, M4
Sociology	B4, K2, M3
Anthropology	K1
Art History	G1
Cultural studies	L2
Drama	M2
Economics	N1
Geography / research methods	N2
Politics	F1

**Table 4.12: Subjects and lecturers**

The interviews were audio taped and notes were taken at the same time, as with the pilot and trial studies. Full verbatim transcripts of this data and the trial study data were prepared following the interview, by a third party. As an initial step in the analysis of the data I checked all the transcripts by listening to the tapes and extracted factual, contextual data. For example, the number of courses on which interviewees said they used a VLE, the number of years they said they had used a VLE, the course level and student numbers of the ATI example, their awareness of the existence of policy and so on. This data was recorded on a spreadsheet for future reference, together with the ATI scores. The following section describes how the interview data was analysed as a preamble to describing and discussing this data in Chapters 5, 6 and 7. The data from the trial and main

studies was analysed together and will be referred to as main study data from here onwards.

#### ***4.5 Analysis of the main study interview data***

I began to analyse the interview transcripts starting with the biggest group of interviewees, WebCT users. My intention was to start coding the interview data, using QSR qualitative data analysis software, to develop a preliminary set of categories. These would then be informed, revised and refined by the analysis of the remaining transcripts until there was a workable set of categories that represented the greatest amount of data. This process is termed data reduction: categories are created to describe data by identifying common qualities or patterns. The categories or descriptive labels are used to group comments in relation to a particular aspect of the problem being researched and these are then distilled into a smaller set of categories that characterise all the data. This provides a level of coherence to the interpretation of interviewee comments and a structure to enable description. However, coherence can obscure variations in experience, therefore these were drawn out when describing and discussing the categories within the narrative of the data analysis chapters 5 and 6.

I checked a sub-set of the WebCT interviews first and re-read the transcripts to get an idea where to start the data sorting. The sub-set I chose were interviews from Universities E and N: there were three interviewees at each university, E was from the post-1992 sector, N was from the pre-1992 sector, E was the first interview site, N was the last. This also provided an opportunity to do a consistency check on the questions asked which proved to be consistent, allowing for the variations discussed previously in Chapter 3, p. 66.



The main study interview schedule structure provided a starting point for the structure of the analysis categories. Using QSR data analysis software I created sixteen categories or ‘nodes’ that were later combined, condensed and tweaked to create a series of sub-categories within three overall categories, related to the three research questions. Initially the parcelling up of chunks of text and coding them by interview question themes meant a lot of what turned out to be irrelevant or unnecessary data was collected at the nodes. However, one of the benefits of using the analysis software meant that these chunks of data could be searched, re-sorted and re-coded with relative ease.

I tried to create more relevant codes by annotating text, examining annotations and refining the codes used. I annotated the transcripts from University E and then N to indicate the relevance of what the lecturer was saying to the research questions, “why”, “how” and the contextual factors affecting use, initially conceived of as “barriers”, but later revised to “lecturers’ needs and concerns”. The software collects these annotations at the ‘document annotation node’. I read through the collected data to see whether I could identify any new categories. I then grouped the previously created nodes according to the research questions, labelled as: reasons, actual use, lecturers’ needs and concerns.

The data analysis techniques used are consistent with the ‘Constant Comparison Method’ associated with grounded theorising (Glaser & Strauss, 1967; Strauss & Corbin, 1998) and the ‘Continuous Refinement’ of categories associated with a naturalistic approach (Lincoln & Guba, 1985) to research. The following sections describe this process in more detail by explaining how I analysed the data in order to answer the first and then the second research question (sections 4.5.1 and 4.5.2 respectively). The third research question was handled differently, this is explained in section 4.5.3.

### 4.5.1 Answering the research questions – part one

The first question to be tackled was “Why do lecturers say they use a VLE?” As explained above I began coding with a sub-set of the transcripts, WebCT users, those from universities E and N. Careful reading of the transcripts indicated that some of the relevant data was to be found when interviewees described the specific use of the VLE, not only in answer to questions about motivation and intention for use. I coded relevant parts of the interview transcripts at nodes called ‘reasons’, ‘policy’ and ‘useful aspects of the VLE’. I later changed the name of the ‘policy’ node to ‘policy and ethos’ to incorporate elements that were less concrete than explicit written policy stating VLE use was mandatory (of which there was little evidence). For example, elements such as student expectations or requests for ICT use, colleague use of ICT or lack of use, pressure from line managers or the university administration.

I then read through the text that was coded at the three nodes (reasons, policy & ethos, useful aspects if the VLE) and tried out various sets of categories. My intention was to look at the data collected under the three nodes and develop a series of categories that would best describe the reasons given by lecturers for their use of VLEs. My first attempts are shown in Table 4.13 and Table 4.14. Version 1 was created following the coding of transcripts from universities E and N, version 2 once the data from Universities H and F had been added to the nodes.

Category	Description
1. Purposeful	Chose to use VLE because could see application of tool or wanted to support a particular teaching strategy
2. Exploratory	General interest, colleague influence
3. Enforced	Felt compelled to use VLE because of policy or pressure – may also be driven by elements of 1 & 2

Table 4.13: Draft categories – version 1

The categories in Version 1 did not work because they were too general. The third one (enforced) did not really work as a label because it was not subtle enough to include perceived pressure to use a VLE and implied that lecturers did not have a choice. Use was exploratory because they were early adopters and were trying out a new technology. They had all made a decision to become involved. There was no enforced use as such because even the lecturers who felt coerced (E1 and J1) had been able to opt out, although lecturers were aware of an expectation and encouragement to use the VLE. The lecturers interviewed had decided how to apply the VLE to their teaching situation so it was purposeful use. What was lacking was a link to the other focus of the research: the way in which the VLE was used and the way this fitted with a lecturer’s approach to teaching.

Category	Description
Pedagogic	To do with teaching and learning strategy: to support teaching and learning, to enhance or improve it
Convenience	Use for convenience sake: to help with administration and workload

**Table 4.14: Draft categories – version 2**

Version 2 began to look at data in terms of fit to teaching strategy or use as an information management tool. However, it missed out reasons given such as interest, the pressures that some lecturers felt they were under to use a VLE and the ethos elements that encouraged, supported or hindered use.

I added data from the final group of WebCT users, at University M and read through all the data coded at the three nodes. This indicated that there was an overall perception among the lecturers interviewed that the use of online resources or ICT tools to support teaching



and learning was the way things were going. However this was matched by concerns about the removal of face-to-face teaching and about a move to distance education (this is explored in more detail in Chapter 6).

Interviewees gave a number of reasons for the use of a VLE. One of the strongest was an interest in the use of ICT, either in general or some interviewees specifically referred to its application to a particular teaching and learning situation or problem. This was then related, by the interviewees, to changing or enhancing their own practice, improving the learning environment for students and supporting student needs better. VLE use was seen as a way of encouraging and motivating students who are already familiar with and have an interest in using ICT while they reported that their institutions were keen to harness the flexible access aspects of online education to widen access. A further reason lecturers gave was to cope with the demands of the job. This produced another series of categories to test, see Table 4.15.

Category	Description
Pressure	The way things are going / policy
Interest	An interest in the use of ICT (link to changing practice)
Learning	As a way of motivating / supporting students to work
Flexibility	Widening access
Convenience	Coping with the job

**Table 4.15: Draft categories – version 3**

By extending the transcript coding to users of other VLEs I was able to develop the categories further. Once all the transcripts were coded I summarised the selected transcript excerpts (found at the three nodes – reasons, policy & ethos, useful aspects of the VLE) and recorded in a spreadsheet divided into overall reasons and reasons given for actual course use. This distinction was made because it was thought that the original motivation

or rationale might have been different to the eventual reason as interviewees discovered what it was possible and practical to do with a VLE. This eventually enabled the distinction between the motivation for and intention of use to be identified.

Summarising the transcript excerpts in a spreadsheet afforded another opportunity to understand what lecturers meant by their comments. This demonstrated that they explained their reasons for use of a VLE in terms of having an interest in the VLE and exploring its use, being under pressure to use a VLE, using a VLE to help with administration and course management and to support and extend learning. Table 4.16, below, shows the way in which the categories from Table 4.15 were reorganised into four categories, each comprising several sub-categories. ‘Flexibility’ and ‘convenience’ became part of a new category called the ‘management of student learning’. The right hand column shows the sorts of things that were included within these categories.

Categories	Description
Interest in ICT to support teaching & learning <ul style="list-style-type: none"><li>• Influenced by:</li><li>• experience</li><li>• approach to teaching</li></ul>	Interviewees said they began to use a VLE because they were interested in what it might enable them to do (this implied a link to their teaching approach), or because they had always been interested in ICT (implying that a VLE was just the next ICT tool). Interviewees tended to have previous experience using IT or the Web to support their teaching.
Pressure to participate <ul style="list-style-type: none"><li>• institutional policy</li><li>• colleague use</li><li>• student expectation</li><li>• career necessity</li></ul>	Interviewees felt that they ought to become involved because students expected ICT to be used, colleagues were using a VLE or the Web and so they thought they ought to keep up, they though use would look good for their career, it might help with the demands of the job.



<b>Managing student learning</b> <ul style="list-style-type: none"><li>• flexibility - the electronic filing cabinet</li><li>• communication - marks, course admin.</li><li>• tracking to check up / motivate</li></ul>	This included elements to do with course management and administration: making sure that that students had access to course content when ever it was needed, to provide structure for student learning and about communicating with students regarding course organisation or to return marks. Based on a need to support students who study on different modes (full or part time) and have many demands on their time and on a need for interviewees to manage their own time more constructively in the face of increasing student numbers.
<b>Facilitating teaching &amp; learning</b> <ul style="list-style-type: none"><li>• access to resources – currency, archives</li><li>• guidance &amp; feedback - student self-help, reflection</li><li>• learning communities - peer help</li><li>• the use of FAQs, MCQs</li></ul>	Interviewees said that they used a VLE to enhance the learning experience: to make students active (they needed motivating), to encourage students to manage their own learning (catch up / extend / enhance), to support collaborative work, to make a wider variety of resources available (complaints about paucity of traditional resources available), to facilitate online discussions and build learning communities.

**Table 4.16: Draft categories - version 4**

I reviewed the data once more by amalgamating the overall and actual use reasons summarised in the spreadsheet and coding them by sub-category. Frequent reference was made to the full transcripts so that the comments could be better understood and were not removed from context. This enabled the refinement of the sub-category labels. It was also possible at this time to think more about the link to one of the other research focuses: the way in which the VLE was used and the way this fitted with a lecturer’s approach to teaching. The two distinct approaches used by the ATI (information transmission / conceptual change) indicated a way in which the ‘teaching and learning’ and the ‘management of learning’ categories could be split and more clearly defined as the



‘facilitation of learning’ and ‘course management’. The final categories developed are explained more fully, with supporting quotes, in Chapter 5.

Whilst analysing the first portion of the data I found that some of the reasons for VLE use on a particular course turned out to be more relevant to the ‘needs and concerns’ categories. This might have been because of the focus of the question, which asked about limitations of the VLE and why particular tools within the system were used. This elicited comments that indicated influences on the use of a VLE. Any such comments were re-coded as ‘needs and concerns’ data. An example of data re-coded in this way was any comments about funding received to develop VLE use: this was applied for because of initial interest in VLE use (a ‘reasons’ category), but in actual fact influenced how far VLE use could be developed. Comments regarding ethos were similarly difficult to categorise. For example, the ethos of ICT use in a department encouraged use or was a potential barrier so was part of ‘needs and concerns’, but could also be part of the ‘interest’ and ‘pressure’ categories within ‘reasons’. I therefore included comments in whichever categories appeared relevant.

#### **4.5.2 Answering the research questions – part two**

The next question to be answered was “What do lecturers say hinders or supports their use of a VLE to support teaching and learning?” I used a similar process to the one described above and in fact began coding the transcripts, as I went through them to answer the first research question, picking out what interviewees thought they needed to be able to successfully use a VLE. I had some idea what might affect their use, as indicated by the interview questions, for example level of support and advice, ethos, ease of use and ICT comfort levels. An initial set of categories created is shown in Table 4.17; the QSR analysis software generated the numbers shown.

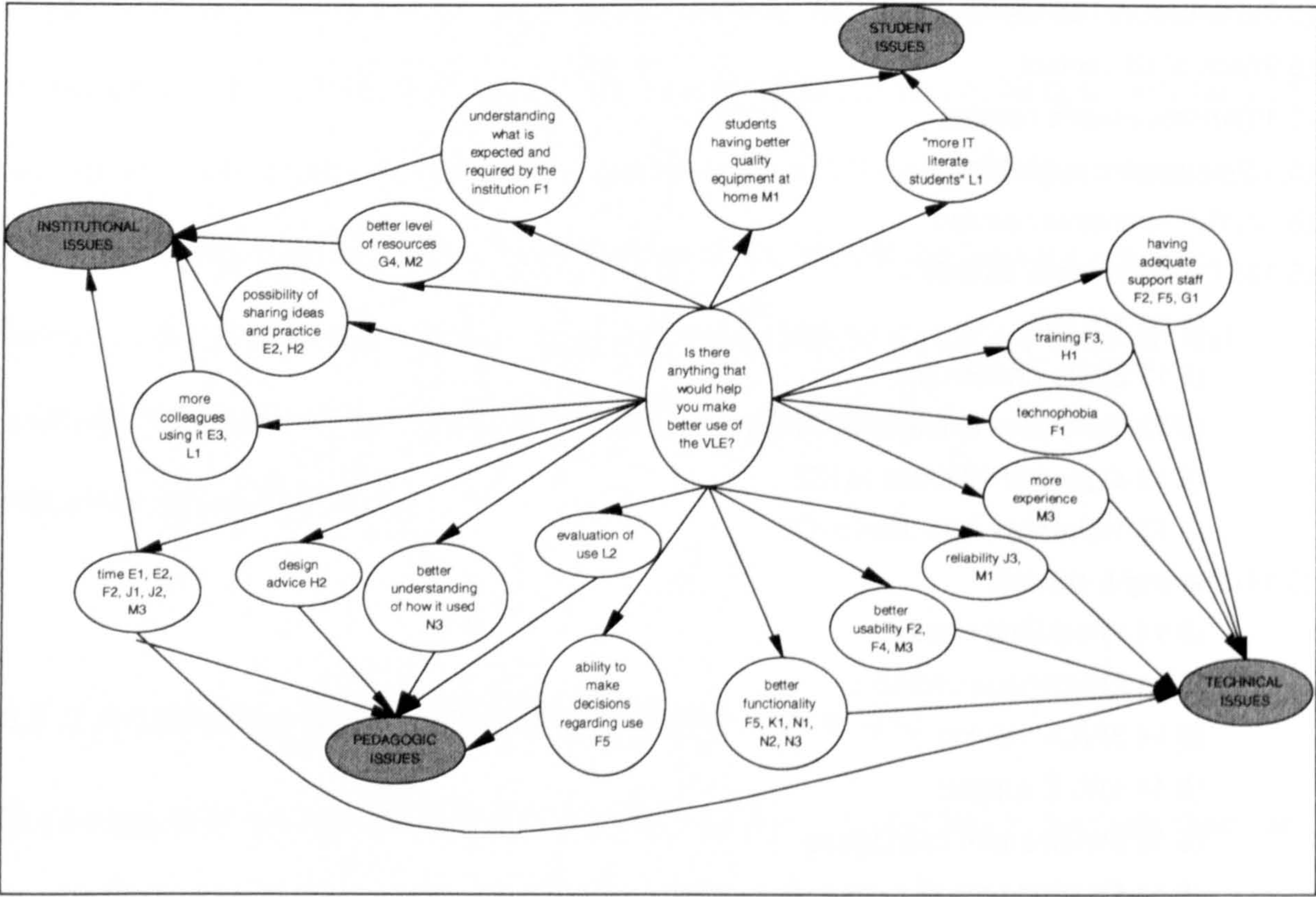
(5 1)Time & effort issues
(5 1 1)time as inhibitor
(5 1 2)VLE increases workload
(5 2)lecturer support needs
(5 3)student issues
(5 3 1)Student characteristics & attitudes
(5 3 2)Student ICT literacy & accessibility
(5 3 3)student ICT training & support
(5 3 9)lecturer concern about technical skills needed
(5 4)Community of use
(5 5)lack of support for teaching innovation
(5 6)difficulty of creating expectations
(5 7)Suitability of use
(5 8)Job security concerns
(5 9)lack of f2f contact
(5 10)Improvements needed
(5 11)equipment availability
(5 12)VLE restrictive / limited
(5 13)IT experience & attitude
(5 13 1)HTML
(5 13 2)lists and forums
(5 13 3)previous online experience
(5 13 4)general attitudes to ICT
(5 13 10)Lecturer attitude to ICT
(5 14)Training & support
(5 14 1)reskilling needed
(5 14 2)training provision
(5 14 3)VLE training
(5 14 4)VLE support
(5 14 5)status with colleagues
(5 14 6)importance of colleague support
(5 15)Advice

**Table 4.17: An extract from a QSR coding report on ‘nodes’ or categories created**

Data analysis was inductive; I began by identifying factors that prevented VLE use. This resulted in quite a negative list that, as explained above, was initially labelled ‘barriers to use’. However through further analysis I found that although interviewees complained



about the shortcomings of a particular VLE or an environment of use they also suggested possible solutions or hints for users following them and had ideas about what was necessary to expand VLE use past early adopters such as themselves. A more inclusive label was needed, to more accurately describe the intention behind some of the comments. ‘Barriers’ became ‘needs and concerns’ to cover issues like concerns about the effect of VLE use on students and institutional motivation for VLE adoption, to interviewers’ own need for ICT training and support and an environment where the use of a VLE was the norm.



**Figure 4.3: Identifying support factors for using a VLE**

The data extracted from the interview transcripts seemed to indicate three themes: ‘student issues’, ‘environment of use’ and ‘technical issues’. At the next stage ‘pedagogic issues’ were separated out from ‘environment of use’ which became ‘institutional issues’. The



most useful interview question in discovering lecturers' needs and concerns was: Is there anything that would help you make better use of the VLE? The answers given illustrate how a selection of the data was sorted into the four over-arching categories, shown in Figure 4.3. Lecturers needs and concerns are described and discussed in Chapter 6.

### **4.5.3 Answering the research questions – part three**

The final question to be answered was “How do lecturers say they use a VLE to support face-to-face teaching?” The way in which it was answered was handled differently to questions one and two in that a series of categories was not created. Instead the way interviewees described their VLE use was compared to various typologies of online education in order to give an overview of use. Then the particular elements of a VLE interviewees said they used and additional technology and software tools employed were listed to show what interviewees used. The ATI scores were calculated for each interviewee and this seemed to show that interviewees were more student- than teacher-focused in approach. The effect of context was considered by examining the variation in scores on both scales (overall and with respect to a variety of contextual differences). It was difficult to detect any contextual differences because of the small number of interviewees involved and the variety of experiences represented, nevertheless the means and standard deviations were reported and unpaired t-tests conducted where possible (see Chapter 7).

An aim of the research was to investigate whether or not VLEs were used to support student-centred teaching methods and I have explained (see page 121) that the ATI was used as a way of indicating the likely teaching methods used. The ATI scores were used to select four cases (interviewees who obtained outlying scores in comparison to other interviewees) so that the way interviewees spoke about their teaching could be explored in

greater depth and the teaching methods employed when using a VLE could be identified.

The teaching methods categories developed for the pilot study were used to inform this analysis which is explained in more detail in Chapter 7.

The following three chapters describe and discuss the data collected in more detail.

## **Chapter 5: Reasons for the use of a Virtual Learning Environment**

This chapter uses data collected for the trial and main study to answer the research question “Why do interviewees say that they use VLEs?” and to address some of the aims of this research. The aims attended to and the focus of the interview questions used are explained in Section 5.1, where the analysis categories developed are also listed alongside short explanations of the data that gave rise to each category. Sections 5.2 and 5.3 describe the data in more detail, with supporting quotes while section 5.4 discusses how far it was possible to answer the research question and fulfil the research aims.

### ***5.1 Exploring and understanding the reasons interviewees gave***

One of the aims of this research was to explore the reasons behind interviewees’ use of a VLE, whether they thought it might fulfil some teaching and learning need or they felt compelled to use it. As outlined in Chapter 2, VLEs provide a set of tools, including communication tools such as a synchronous ‘chat’ facility and asynchronous discussion forums, accessed through one common interface, that are able to support collaborative working and communication outside face-to-face or contact time. This means that it is possible, for example, to offer far more than a collection of Web pages or a series of links to online resources. Therefore another aim was to explore whether the interviewees, who were from discursive subjects in the humanities and social science discipline areas, had decided to use a VLE particularly because of these integrated communication tools, or even if they had found a specific use for these tools following initial use. Finally, in line with the overall aim of the research, to explore whether interviewees had decided to use a



VLE in order to support student-centred methods such as those listed in Chapter 3 (Section 3.4.3, p. 98).

The questions and prompts used to ascertain interviewees’ reasons for using a VLE are shown below, in Table 5.1 (for the trial main study) and Table 5.2 (for the main study).

The development of the questions and prompts was dealt with in Chapter 4.

<p><b>Part 2:</b></p> <p>Why did you decide to use the VLE?</p> <p>Perceptions of what could be gained by use.</p> <p>What was your motivation for using the VLE?</p> <p><b>Part 4:</b></p> <p>What elements of the VLE do you use to support your students’ learning?</p> <p>What are the reasons for use of these elements?</p> <p><b>Part 5:</b></p> <p>Is there any aspect of the VLE or its use that has been particularly useful?</p>
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**Table 5.1: Reasons for use questions and prompts from the trial main study**

<p><b>Part 1:</b></p> <p>Why did you start using it?</p> <p>Is there any policy about the use of the VLE?</p> <p>+ What is it?</p> <p><b>Part 4:</b></p> <p>Why did you use the VLE in this way?</p> <p>How did you choose which tools to use from the range available within the VLE?</p> <p><b>Part 5:</b></p> <p>Have you found yourself using any other ICT tools or software packages to support your teaching? Can you explain why?</p> <p>Is there any feature of the VLE that is particularly useful for your subject?</p>
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**Table 5.2: Reasons for use questions and prompts from the main study**

There were three objectives to the prompts used and questions asked:

- to identify the overall rationale or impetus for use (a lecturer’s motivation),
- to investigate the specific reasons for a particular use (a lecturer’s intention), and then
- to ask whether the lecturer had discovered any benefits or advantages to use.

The aim of this last objective was to try and understand how interviewees’ reasons for use may have changed as they became more familiar with the VLE system: whether they already had a clear idea of what they wanted to achieve and whether this had been fulfilled.

The interviewees were asked whether they were aware of any policy compelling VLE use. Institutional or departmental policy of this type was not identified as a factor in pilot study interviewees’ decision to use a VLE, it was concluded that this was because VLE adoption was at an early stage in those institutions. As a consequence use was mostly exploratory with the emphasis on strategies to encourage this (see Policy, page 162). According to most of these interviewees, because specific policies (broader than a general intention to adopt a VLE and encourage the use of ICT) had yet to be formulated, they felt little compulsion. The question about policy was retained in order to gauge whether this was changing and whether policy was becoming more visible as time went on and institutions wanted to encourage more lecturers to become involved with the VLEs they had invested in so heavily. The way innovators and early adopters used VLEs may affect the focus of this policy.

Four categories were developed from an analysis of the data collected. This process is described in more detail in Chapter 4. The categories are listed in Table 5.3. Each category comprised a number of sub-categories that sought to explain the types of data classified therein; these are shown in the second column of Table 5.3.

Lecturer Motivation	
Interest	Interest in ICT to support teaching and learning
• Experience	⇒ Lecturer already using the Web or ICT, VLE use is described as the next step
• Ethos	⇒ Lecturer can see colleagues using the VLE, there is an opportunity to become involved with VLE use
• Change	⇒ Lecturer thinks a VLE will enable them to do something different (change the way they teach or what they can offer to their students)

<b>Pressure</b> <ul style="list-style-type: none"> <li>• Policy</li> <li>• Expectation</li> <li>• Skills</li> <li>• Career</li> <li>• Environment</li> </ul>	<b>Pressure to participate</b> <ul style="list-style-type: none"> <li>⇒ Lecturer believes institutional policy encourages or expects VLE use (or will do)</li> <li>⇒ Lecturer believes students expect a VLE to be used because they have used one in other courses or they became familiar with ICT use at school, the majority of colleagues use online materials</li> <li>⇒ Lecturer feels the need to teach ICT skills to students, a VLE is the way this need is met</li> <li>⇒ Lecturers see VLE use as personal professional development or feel that use may provide career enhancement.</li> <li>⇒ Lecturers perceive that problems in the working environment may be alleviated VLE use, e.g. scarce resources, too many students.</li> </ul>
<b>Lecturer Intention</b>	
<b>Management</b> <ul style="list-style-type: none"> <li>• Flexibility</li> <li>• Communication</li> <li>• Tracking</li> <li>• Structure</li> <li>• Maintenance</li> </ul>	<b>Course management</b> <ul style="list-style-type: none"> <li>⇒ To provide access to course information and resources at any time and to restrict access to those eligible</li> <li>⇒ To communicate with students about administrative matters</li> <li>⇒ To check up on student access as a way of motivating them to work and for evidence about who is working and when</li> <li>⇒ To make sure all students get access to an agreed minimum of course materials, to provide course structure including framework or outline notes</li> <li>⇒ To facilitate quick and easy course material updating for interviewees, plus saves time photocopying</li> </ul>
<b>Learning</b> <ul style="list-style-type: none"> <li>• Access to resources</li> <li>• Guidance and feedback</li> <li>• Activity and engagement</li> <li>• Learning community</li> </ul>	<b>Facilitation of learning</b> <ul style="list-style-type: none"> <li>⇒ To facilitate access to a wider range of resources and encourage students to evaluate and use a greater variety - for example access to primary sources, more up to date material, e-journals and information from national and international bodies</li> <li>⇒ To provide guidance and feedback - for example indicators of quality Web sites, the use of discussion forums to build a frequently asked questions (FAQs) resource or to provide assignment help</li> <li>⇒ To encourage and support activity and engagement – for example the use of quizzes to reinforce information and encourage reflection, encouraging independent learning and learning how to learn</li> <li>⇒ To build learning communities by providing opportunities for collaboration and sharing</li> </ul>

**Table 5.3: Main study categories – reasons for VLE use**



The following sections describe the reasons interviewees gave for using a VLE. Section 5.2 begins by outlining their original rationale or impetus for use, labelled ‘motivation’, and continues in section 5.3 by reporting the specific reasons they gave for use, labelled ‘intentions’. If interviewees identified any benefits or advantages that had occurred to them, following initial use, these were also classified as ‘intentions’. Each section is divided under headings that describe the particular ‘motivation’ or ‘intention’ and correspond to the analysis categories listed in Table 5.3.

## **5.2 Motivation**

The way in which interviewees explained the motivation behind their decision to use a VLE is summarised in the tables contained in Appendix H. Eleven interviewees (E3, F3, G2, H1, H2, J2, L1, M1, N1, N2 and N3) were classified as giving ‘interest’ as their main motivation for VLE use. A further eleven (B4, E2, F2, F5, J3, K1, K2, L2, M2, M3 and M4) were classified as being motivated by a mixture of ‘interest’ and ‘pressure’. The remaining nine (B5, B6, E1, F1, F4, G1, G3, G4 and J1) described ‘pressure’ as their main motivation. Sections 5.2.1 and 5.2.2 describe and discuss this data in more detail.

### **5.2.1 Interest**

Twenty-two of the thirty-one interviewees described ‘interest’ as a motivation for VLE use. It was the main motivation for eleven while a further eleven interviewees felt a combination of ‘interest’ and ‘pressure’ to use the VLE provided by their university.

Some interviewees explicitly stated that ‘interest’ was a reason, for example:

“I was intrigued by the technology, like many people. I was interested in exploiting its power and its potential.” (M1)

“I was interested in using it alongside face-to-face learning, teaching. And I suppose I was interested in the potential for technology to develop new ways of learning. Both in terms of presenting information and in terms of student participation.” (N3)

For others ‘interest’ was implicit in their comments, for example:

“I think it does have useful potential as well so I suspect I would have used it anyway. Whether instructed to or not. [...] I'm all for using technology when it's helpful and useful.” (L2)

There were three elements that aroused interviewees’ interest: experience, ethos and the ability to change what they did. Interviewees who said they chose to use the VLE either because they already had a general interest in ICT or because they were already using the Web or other ICT to support teaching and learning were described as being motivated by ‘experience’. VLE use could be viewed as a natural progression. Interviewees who said that they could see a VLE being used by colleagues and wanted to become involved were described as being motivated by ‘ethos’. ‘Change’ classified those interviewees who said they decide to use a VLE because they thought it would enable them to do something (in terms of teaching and learning) that they could not do before. This last was the most common ‘interest’ reason given. It overlapped with categories developed to describe interviewees’ intentions, because in identifying the way in which a VLE could be used to change some element of their teaching or students’ learning an intended use was specified. The ‘interest’ motivations for use are described in more detail below.

### ***Experience***

Many of the interviewees already had experience in using ICT, including the Web, and felt comfortable in exploring VLE use. However, only two (F2 and K2) actually described the reason behind their VLE use as a natural migration from the use of generic ICT tools or

Web use. These two interviewees had previously used computer-based learning packages and described VLE use as improving on what was possible:

“... years ago we did stuff ... on stand alone machines ... it was a way of giving students a range of materials which they couldn't otherwise get hold of. ... And WebCT ... it's just a huge step up really, you can network, they can use it from home, it's accessible at different times. ... the idea is to give them a course which is almost akin to using an archive but online here, rather than having to disappear off into the Public Records Office.” (F2)

Four interviewees (B4, E3, H2 and J3) said that their interest came from the long term use of ICT to support teaching and learning, for example: “I've been using IT ... in teaching since my first experiment was in 1982.” (B4) J3 had an “... existing interest in online learning and development of courseware in law ... had been doing stuff on [the VLE] and was interested in developing Web pages and had been for many years.” Another three interviewees described their interest as being a direct result of previous Web site use to support student learning (K1, L1 and M2).

Two interviewees explained that their interest arose out of the use of computer mediated communication (CMC): G2 with his students and H1 through her own learning experience on a distance education course. A number of interviewees said that they became involved with VLE use simply because they had a particular interest in ICT (M4) or just because they liked to try new things (F3, M2, M3): “I'm a great believer in the use of IT, so I wanted to explore it anyway.” (M4), “... it was a new toy.” (M2).

Other motivations, related to interviewees' previous experience of ICT use, included ease of use (L2), the integration of tools within the package and the fact that it was not necessary to write complicated HTML code (K1 and J3):



“... I think Blackboard is, as they go, is pretty easy. You know most people can upload a Word file once they've been shown. [...] it's so much easier than Web sites I think. It definitely is.” (L2)

“... it's easy to use you can then combine word files and HTML files and Web sites and visual images and everything. So you get everything in one place. Whereas when you're doing it just on the Web you have to set up either Dreamweaver or some other structure which is much harder.” (K1)

“The added bits were the fact that the course room was there, built in, and part of the overall package and you could shift easily between your course materials and the course room<sup>39</sup>. [...] it had built in assessment. It had the facility in it for writing, very simple assessments which could be graded by the system and returned to the student automatically.” (J3)

Two interviewees (H2 and K1) mentioned that they had been attracted by a VLE's enclosed, secure environment<sup>40</sup>

“... when I found out about WebCT I really had to get on because I thought was a very good contained and independent environment, safe environment where the students could actually work in.” (H2)

“It seemed a much more effective, efficient way of coping with material and it wasn't available world wide, it was just locally to the university.” (K1)

## ***Ethos***

The prevalent ethos in an institution, school or department stimulated some interviewees' interest. B4 thought he “... would have got involved in a VLE anyway. ... because it is

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<sup>39</sup> The course room in this VLE is the equivalent of a discussion forum in other VLEs.

<sup>40</sup> VLE access can be restricted by password to only those people eligible to view the information held within. The course administrator, who is often the lead lecturer decides the level of access people can have, this is typically restricted to members of the same institution at its widest level and course members only for more sensitive material.

flavour of the month at the University.” E2 felt that the use of an “Intranet which was developed about ‘97 ... [and] became Web-based in ‘99.” contributed to her interest.

Two interviewees (E3 and F3) said that use of the VLE by colleagues played a strong role in their interest, for example:

“... very important in me starting was the influence of a colleague [...] one of the first learning and teaching fellows here, one - in the first wave of people who started to adopt WebCT. She was teaching the same students that I was teaching so I really was enthused by what she was doing and wanted to jump on the bandwagon really. So I started to follow her as soon as I could.” (E3)

### ***Change***

Some interviewees said that they used a VLE because it offered the potential for changing what they did and what they offered to learners:

“My interest as a teacher and learning fellow ... is to experiment with what we can deliver in the way of teaching and learning through IT that you can't do normally.” (B4)

That is, it enabled them to support different modes of study, to facilitate more activity and engagement, to support discussion and collaboration and to facilitate flexible access to course resources. These last three relate to the ‘intention’ categories described in section 5.3 and have a strong student-centred orientation.

Three interviewees (H1, J3 and M4) said that they were motivated to use a VLE because it made it possible to support students not on campus and to provide courses for different modes of study. M4 used the VLE because she thought the communication tools within it would help her support students on placement, while J3 said use to support face-to-face learning had led to distance learning use:



“... we already deliver [a postgraduate award] in some countries in the Far East face-to-face and that's an inefficient way of doing it. We have to constantly send people out there and we think we can do it better, more efficiently and have greater reach through doing it online.” (J3).

Use to provide distance education was noted as a reason for use, but not explored any further because the aim of the research was to understand the use of VLEs to support face-to-face teaching.

Interviewees liked the possibility of providing access to materials that could be made “... more interactive ...” (K2). L1 had used a VLE to introduce what he described as an interactive approach, that is, student activities presented via and supported by the VLE, and to develop skills, without increasing contact hours. Although primarily motivated by ‘interest’ both K2 and L1 were concerned about the effect of increased student numbers on their teaching. K2 described a VLE as “probably the most useful tool” in handling the problems arising from “the enormous expansion in student numbers with virtually no expansion in staff numbers or teacher resources”.

Three interviewees (G2, J2 and M3) talked about being motivated by a desire to encourage independent learning and wanted to facilitate the acquisition of subject specific skills:

“... I thought it might be a means by which to make the students more proactive in their learning and foster their sense of identity as independent learners.” (M3)

“... it helps the students to identify some of the key or transferable skills that they're going to need both for the formal assessment, for that particular module, and throughout the rest of their degree and beyond it. [...] I mean kind of skills of analysis, reading skills and all the skills that go into writing an analytical essay.” (J2)



A VLE was used for its ability to support communication, discussion and collaborative working (G2 and M2):

“I think that actually there's a lot of advantages for students in discussing without face-to-face. [...] ... the relative anonymity of it [...] the opportunity to think about what you write as opposed to having to blurt out whatever it is that you say.” (G2)

M2 said that she wanted to be able to view the development of students' thoughts as they contributed to different threads in a discussion forum.

Two interviewees (E2 and K2) were motivated by a desire to provide student access to topical information:

“... increasingly I was introducing the students to Web resources, because of the increasing use from the voluntary sector. And the government have the Web as a means of passing on information about the sorts of problems people face in their lives.” (E2)

### **5.2.2 Pressure to participate**

Twenty of the thirty-one interviewees said that ‘pressure’ was their motivation for using a VLE. It was the main motivation for nine (B5, B6, E1, F1, F4, G1, G3, G4 and J1) while eleven interviewees indicated that their motivation was a combination of interest and pressure (B4, E2, F2, F5, J3, K1, K2, L2, M2, M3 and M4). Interviewees said they felt pressure to become involved with VLE use for career reasons, because they felt their students should learn ICT skills, because a VLE helped them cope with the demands of the job or because they felt VLE use was expected. There were two ways in which interviewees described expectation: firstly departmental or institutional strategies, including any policy, that promoted use and might become mandatory and secondly the perception that there was a more general expectation or if students requested use.

Therefore there are five types of ‘pressure’ are described: career, skills, environment, policy and expectation.

### ***Career***

The need to become involved with VLE use for career reasons was strongest at University B where interviewees were facing possible redundancies. Two of the interviewees (B4 and B5) spoke in these terms, for example:

“Well, earlier on there were pedagogical kind of academic reasons that it would be good. I mean right now for me [the VLE] is really a career track as well because redundancy here is likely.” (B4)

Other interviewees, in particular F3 and M3, mentioned professional development motives. However their motivation was expressed in terms of personal choice and development rather than ‘pressure’ and so was categorised under ‘interest’. For example: “I like to keep on top professionally of new things.” (M3).

### ***Skills***

Many interviewees talked about the need to improve student ICT skills and the way that VLE use could be harnessed to do this, but was also affected by students’ lack of skills (something discussed in Chapter 6 – Student Issues). Four interviewees (B5, E2, J1 and M2) spoke specifically about being motivated by a perceived need to facilitate the acquisition of ICT skills:

“I mean one aim of this core course is partly the skills of doing a project but partly general IT skills so it's a way of introducing students to IT skills. We don't have a separate IT module. So I've seen it as part of my brief to bring up the level of IT work.” (J1)

The acquisition of ICT skills was also one of the perceived benefits.



## ***Environment***

Interviewees were motivated to use a VLE because they thought it would help them cope with the demands of their job. They described four types of ‘pressure’ in the teaching and learning environment: lack of resources, class timing, student numbers and types of student.

Three interviewees (F1, G1 and K1) described using electronic resources to counteract a paucity of conventional resources and facilitate access to other materials:

“... to a large extent the expansion of the use of electronic sources, the electronic journal source in the library for example. A lot of the impetus for that has actually come from the subjects based on feedback from the students when they're complaining about, [...] availability. The books can go out and then disappear for the next three weeks. ... whereas if it's an electronic source everybody can go in and take their turn.” (F1)

“Other advantages are Web based material which has no particular equivalent in conventional libraries.” (G1)

E2 had previously found herself attempting to conduct a tutorial that involved Web searching at a time inconvenient for Web access and student attendance. Therefore she used a VLE to convert from a face-to-face to an online tutorial that students could complete in their own time.

It has already been mentioned that interviewees were concerned about the effect that increases in student numbers might have on their ability to adequately support students (page 158), but that they found a VLE “... probably the most useful tool in handling the problems that arise from that.” (K2) Four other interviewees (E1, F4, G1 and J3) said that they had been motivated to use a VLE because of increases in student numbers:



“... we have to take part in the University and strategic plan which was to move towards using VLEs and we were also feeling the pressures that I mentioned. [...] Student numbers in particular. We were having individual modules with more than 350 students on them. Which were becoming very, very difficult to manage.” (J3)

Three of these (F4, G1 and J3), as well as K2 and L1, were motivated to use a VLE because of the need for better support for changing student profiles and concerns about the impact of student numbers on the level and quality of support they were able to provide:

“... these guys are minimalist, they like feedback. They can't have you know continual access to a teaching team member because of limited resources or so on and so forth.” (F4)

Another interviewee (B5) considered the amount of contact time available “... insufficient to make a, any real impact on a person's ... command of the language ...” and said that activities supported by a VLE gave structure to student time outside the classroom and helped to ensure they did the work required.

## ***Policy***

Interviewees were asked whether they were aware of the existence of policy about VLE use, in order to gauge the level of compulsion they felt. All the higher education institutions (HEIs) where interviews took place had decided to adopt an institutional VLE (this was one of the ways of identifying likely sites for interviews and in fact one of the criteria for inclusion in the main study). Comments relating to the existence and focus of policy are summarised in Appendix I. A review of answers to the question about policy demonstrates that there were a number of strategies in place to encourage rather than enforce use. At University E lecturers were invited to apply for online learning fellowships, with an expectation that each faculty would suggest someone; those taking part were asked to work towards replacing some contact time with online materials and

activities. Other strategies included: teaching and learning fellowships with an emphasis on ICT and a remit to encourage and support colleagues using the technology at Universities B and F, the use of pilot projects at Universities G and J, putting a proportion of modules online by a set date at Universities B, J and M, the use of dissemination events and general training open to all at Universities F, G and L and the use of central departments with an educational development or a learning technology focus to support or guide use at Universities J, K, L, M, and N. Only interviewees at University H seemed to be totally unaware of any overall policy or strategy to do with a VLE.

Strategies for increasing involvement meant some interviewees felt pressurised into using a VLE. E1 and J1 felt they had been forced to use a VLE because their department needed a volunteer for the online teaching fellowship (E1) and for a pilot project (J1):

“we were under a very tight timescale when we were just told history was a pilot and we had to do some electronic learning. We were one of four pilot subjects. And it was brought in during the academic year which was a bit problematic. Or at least the pressure to develop it and then it was launched the next year. [...] history was told they had to use it and I was talked into being the person who first did it. ... we're not a strongly technological group, only seven or eight of us and I was the most, well least uncomfortable about doing something.” (J1)

Interviewees at University G who had previously used ‘conventional’ Web sites (G1 and G4) were told that these would no longer be supported and that they would have to move materials within the VLE:

“Because they told me to! Yeah, I mean we'd been using, before that we'd been using a Web site to complete the course which I had done and Blackboard was - yeah the institution said use a virtual learning environment instead, it will be the new standard, so that's the reason for the shift.” (G4)



At Universities K and L the decision had been taken to move everyone towards VLE use, supported by central departments, but the amount of pressure to use the VLE was dependent on the department or school attitude and to a certain extent on individual lecturer comfort with ICT:

“... the vice chancellor has - is actively encouraging it. He's actually even signed on to one of our modules to look at the sites. [...] At the moment it's, it's supposed to be encouraged throughout the university.” Department policy is “to have everybody using them, to greater or lesser effect.” (K1)

“I think there's a university policy to encourage its use. I think it's now part and parcel of staff training. All new interviewees I think are given a course on Blackboard use. There's no pressure from, you know, people in so called authority, like the head of department to use it.” (L1)

“Well it was a sort of centre wide thing that we would use it to a degree. And it was just part of the delivery methods that the centre had decided to adopt. So I suppose it wasn't so much a personal decision as a, you know, a management one.” (L2)

An obvious link with the ‘ethos’ subcategory can be seen in these comments.

Three HEIs (B, J and M) had tried to promote the use of a VLE by stating that a certain proportion of modules should be online by a set date:

“... probably about a year ago, we were told that it was going to be a matter of school policy to have one first level module put on [the VLE]. And by ... I can't remember if it was January 2002, but we were given a definite deadline on this.” (B6)

This had not been a great success, not least at M where only one interviewee (M2) mentioned it and did not think it was common knowledge. Although her colleagues (M1 and M3) did state that they thought pressure for use would increase due to the amount of investment.



Interviewees at Universities B and J were concerned about the approach taken by their management:

“What we have to do is to try and harness and direct that and not get imposed on by some crazy managerial plan that you will all do X, Y and Z, which actually didn't work. We had a plan for example that we would have all our modules [on VLE-B] and actively using VLE-B by 2003. And it's quite obvious to everyone that won't happen.” (B4)

“There were grand university pronouncements about percentages of courses within two or three years but there's been less and less actuation of that. And partly because Schools ... we dug our heels in really and we said we weren't prepared to just ... make a blanket use of electronic learning, it depended on the module and the quality issues. So [the executive has] gone quiet on that. But it was a very emotive topic initially because one director in particular referred to people either accepting this or being made redundant and that was used for a long time [...] He said we could either accept it or take your P45. That was in a big meeting and was quoted a lot. But in practise there hasn't been that pressure.” (J1)

B6 questioned the rationale of starting with level one<sup>41</sup> courses, as had been requested, because of the need for these students to take on so many new things all at once.

### ***Expectation***

The final ‘pressure’ interviewees reported was a general expectation or perception that ‘online’ was the way things were going. Interviewees said they wanted to use ICT because of its prevalence in everyday life (B4) and because they were aware colleagues were using VLEs (F1). Interviewees (for example F2, J1 and K1) thought that pressure would increase because students who attended their universities “... come with more and more expectations about computer use so you can't stand still.” (J1) Increasingly they would have had experience of VLE use elsewhere (K1) and expect to use the Web to carry out

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<sup>41</sup> See page 113 for an explanation of levels of study.

research (F1). Two interviewees were motivated by student requests which arose out of constraints on contact time (F1) and experience on other modules (G3):

“Students had initially asked for some kind of forum to continue discussion outside of seminars if they felt that all issues weren't raised. ... a module as this one where it's very current, ... we have to keep up to date with what's actually happening. It's not always possible to cover everything in lectures or in seminars so it's a forum for discussion outside of that standard lecture seminar ...” (F1)

“... I'm going to use it on a level one unit next year as well. For an interesting reason really which is that over the past few years we've been piloting Blackboard essentially ... on a quite a small number of units. But two of them [are] first year units taught in the first semester. And I'm unit leader of the third unit taught in that semester. Students complained "why wasn't there a Blackboard site for the third unit?” (G3)

Interviewees described a range of mixed motivations for VLE use, some of which tallied with those found in the literature and highlighted in Chapter 2 (to help cope with student numbers, provide flexible access to course materials and improve student ICT skills, for example). Interviewees described exploratory use that seemed to have two purposes, to facilitate learning and course management; these purposes were used to classify interviewees’ intentions. These are described in the following sections.

### **5.3 Intention**

When interviewees were asked why they used a VLE in a specific way or whether any feature of the VLE was particularly useful for their subject their replies revealed the intention behind their use of a VLE. These are summarised in Table 5.4, which demonstrates that each interviewee had a complex mixture of intentions.

Interviewee Category	B4	B5	B6	E1	E2	E3	F1	F2	F3	F4	F5	G1	G2	G3	G4	H1	H2	J1	J2	J3	K1	K2	L1	L2	M1	M2	M3	M4	N1	N2	N3
Management:																															
flexibility			X	X	X	X	X	X		X	X		X		X						X		X	X		X	X				
communication						X					X		X		X	X						X		X				X			X
tracking																														X	
structure				X	X					X	X									X				X	X	X		X			
maintenance	X									X			X								X										
Learning:																															
access to resources			X			X	X	X				X		X	X			X			X	X	X	X							X
guidance and feedback				X			X	X	X	X				X				X			X			X	X	X		X	X	A	X
engagement and activity	X	X		X		X	X	X		X				X	X				X	X				X	X	X	X		X		
learning community:		X	X		X	?	X						A			?	X	X								X	X	X		A	X
Key: 'A' means that this reason for use was an aspiration, '?' means that this reason for use was implied rather than explicitly stated.																															

**Table 5.4: Interviewees' intentions in using a VLE and the benefits of use**

The intentions identified included the original way interviewees thought a VLE could be used and any benefits they said they found, which helped them to rationalise their use when reflecting on their practice for the interview. Therefore answers included a degree of post hoc rationalisation. An examination of the intentions articulated by the interviewees produced two distinct categories: those to do with ‘course management’ and those to do with the ‘facilitation of learning’

The following sections (5.3.1 and 5.3.2) describe and discuss the ‘course management’ and ‘facilitation of learning’ reasons given by interviewees in more detail.

**5.3.1 Course management**

Five specific reasons interviewees gave for VLE use were to do with the provision of basic course resources and organisational issues. These were classified as ‘course management’



intentions: flexibility, communication, tracking, structure and maintenance. Interviewees said they used a VLE because they wanted to spend less time dealing with basic administrative chores and the updating of materials (flexibility and maintenance), but also because they wanted to provide flexible access to course materials in order to support student learning (flexibility). They wanted to be able to communicate course information to students, quickly and efficiently (communication) and they wanted to know what resources students were accessing (tracking).

### ***Flexibility***

Interviewees used a VLE with the intention of facilitating flexible access to basic course resources. Interviewees felt that they spent too long dealing with students who had misplaced important course documents, who had missed particular classes and needed handouts or who needed the reassurance and support of readily accessible basic notes and resources. Interviewees used a VLE with the intention of controlling access to resources and making more effective use of contact time.

The material held within a VLE:

“... tends to be the revision of the [material covered in class] that’s a kind of summary. So that if somebody had a good reason, I mean there are lots of good reasons for missing a class, then they could do a bit of catching up that way.” (B6)

The possibility of “catching up” was something valued by other interviewees (F5 and L1), as was the ability to support students working at their own pace (M2). Interviewees hoped that student understanding would improve if they furnished them with a way to revise and review course content:

“... I might go over an example in the class then it is available on the WebCT for them to pursue at leisure. [...] Because although they are there in the class, the sheer newness of things means they cannot cope.” (F5)

Interviewees used a VLE so that their students could access course materials at a time and place convenient to them (E1, E3, F2 and L1):

“...it does mean that they can work more flexibly I mean let's face it, it does, it's always there.” (L1)

The VLE was used for its ability to act as an electronic “... archive come filing cabinet.”

(G2) This was particularly important in respect of students with disabilities:

“Also there was a student in that group who was hearing impaired and had his own note taker. And we thought it was a good idea to pilot [the VLE] to kind of kill two birds with one stone. To put material on there that the student can then access after the sessions. [...]” (B6)

Interviewees (for example F4 and G4) thought that accessible online resources were preferable to overloading students and provided a quick link to sources of help:

“... I find that in week nought or week one, whenever you first have contact with these students they are hit with so much information they just, they forget where it is. ... their minds are just not on the job at all. So I thought, well there's no point in printing a module handbook for it to get lost in the heap of other things that they have when they first come. So my module handbook, which is interactive, links to key skills, all that sort of thing, library resources, is on the Web. My lecture notes are all on the Web. My tutorial guidelines are all on the Web and discussion board is all - is up there as well. They get the results from their assessment, the course assessment, on the Web and the module evaluation is on there as well.” (F4)

Moreover access to scarce resources was thought to be more equitable online (F1). This relates to the concern that interviewees F1, G1 and K1 had about poor resource availability (see comments on page 161).



Interviewees used a VLE because the availability of online materials cut down the need for reams of photocopying (G2 and M3), saving institutional resources (although this was also criticised as transferring the costs to students, see Chapter 6 – Student Issues). According to one interviewee this also prevented information overload because students could decide whether they really wanted a particular handout:

“... it's very economical in terms of school resources once you've got your system set up. So those that want 'fundamentalism' can print it off at their expense and others don't get a handout that they don't need.” (B6)

Some interviewees intended to use flexible access to course materials to facilitate a change in the structure of contact time (E1 and E2). It also meant that contact time could be used more effectively because the need to spend time repeating material already covered, for absentees, was reduced (F5). This was important because it meant there was more chance of covering the syllabus and conversely no need to worry if everything was not covered (something mentioned as a reason for use by pilot study interviewees):

“So you can pack in more. [...] we are never able to really finish the full syllabus. And now with WebCT we can reach a time where we can actually revise. So that sort of difference is, has been made.” (F5)

Another intention of VLE use was to control access to materials (password access is part of a VLE system, see footnote, page 156) in order to protect intellectual property (K1 and L2) and restrict entry to sensitive materials (F5 and M3). This aspect was particularly useful in respect of student grades, as will be seen when describing in the next sub-category ‘communication’.



## **Communication**

The second ‘course management’ intention interviewees gave was ‘communication’. Nine interviewees said the reason for VLE use was that it facilitated better communication (see Table 5.4) in respect of the administration and organisation of student learning:

“I think the main thing is that it allows connection and it allows me to give students up to date, timely information in so far as all the supporting documentation is concerned. So if there's a change in University regulations I can put it in and put it on the one space.” (H1)

This reason for use was distinct from communication as a way of providing guidance and learning support, in response to student queries, or communication to facilitate collaboration and sharing. Intentions such as those were classified within the ‘facilitation of learning’ category, under ‘guidance and feedback’ and ‘learning community’ respectively. The distinction was not always clear cut, as can be seen in some of the later quotes used to illustrate this category. Communication involved the use of CMC such as e-mail, but also the use of the online grade book and the notice board and calendar features.

Interviewees used a VLE because it facilitated communication (G2) and reported that the students described it as useful “For maintaining contact ...” (L2). It was particularly useful if it was necessary to do this outside contact time (E3), when students were on placement (M4) or if contact hours and staffing levels were not adequate (K2).

The ability to restrict access meant a VLE was a useful, private, less time consuming way to inform students what marks they had received:

“... one thing which I dearly love this time is the ability to upload the marks for the students to see it because, you know, the data protection has gone mad.” (F5)

Password access enabled a student to view only his or her own record.

For some interviewees the ability to communicate with students through the VLE was a way of encouraging the students to become more organised (G4 used the calendar function to provide reminders) and to adopt good study habits:

“The other thing we have is an announcements page. So that's very useful, just for housekeeping information, course times and such like, but again also there will say you know, 'Note the White Paper is just coming out', or you know 'Did anyone see The Times this week?', bla bla bla and again we might put a link in there to a relevant article or such like.” (N3).

These last comments illustrate the way in which ‘communication’ can be seen to overlap with ‘guidance and feedback’ which is a ‘facilitation of learning’ intention.

## ***Tracking***

The ‘tracking’ tool is something often vaunted by VLE suppliers<sup>42</sup>, but only one interviewee (N2) identified ‘tracking’ as the intention behind his VLE use:

“And the use of WebCT was only done to actually keep a hold of statistics of usage and logging and so on and so forth. [...] And the aim was to see when the students were using it, because the course had been offered in the, what we call the Michaelmas term i.e. October to December. Dissertations are submitted in September the following year. ... And what I wanted to know was, whether people were using this as a backup resource, as a refreshing resource in June, July, August, and that's something we wanted to check.” (N2)

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<sup>42</sup> WebCT documentation tells a user s/he can “obtain data that allows you to analyse the effectiveness of your course” ([www.webct.com/service/ViewContent?content ID=4441596](http://www.webct.com/service/ViewContent?content ID=4441596)) while Blackboard tutors are told that they can “track student activity” ([www.shu.ac.uk/schools/hsc/modernisation/bboard.html](http://www.shu.ac.uk/schools/hsc/modernisation/bboard.html))

Several interviewees said that they had subsequently found a use for the tracking tools within the VLEs: as a motivator, to indicate to students that their usage would be checked (E1), and to help develop a course by examining which resources and links were accessed (H2). Other interviewees said that they had looked at 'tracking' data out of interest, being amazed that students carried on working via the VLE when a lecturer was not present (L1) and by the times materials were accessed:

“... WebCT can track the usage and when they've been logging on and off and clearly from that they're using at - at some quite remarkable times.” (F2).

G4 liked the sense of control afforded by the statistics which were generated:

“with the Web pages we were just putting them up, hoping the students might occasionally read them. And it was quite difficult to get the hard evidence that they were unless they actually brought printouts into a seminar, whereas you can see what time of day and stuff that they were reading ... and you can really monitor individual students much more closely if you are so minded, using the VLE.” (G4)

However, the 'tracking' tool was frequently criticised: as creating work (E1) or as being difficult to obtain accurate and useful information from (B4 and F4):

“But actually when you want to look at things like how many students have accessed quiz so and so it's very difficult to do. You can't just pull reports off and deal with it. [...] every time a student clicks on a hot link and jumps to another site and then comes back on to [the VLE], it counts as another hit. So you know it seems not to be accurate in that sense.” (F4).

L2 specifically questioned the meaning that could be attached to tracking statistics:

“So you've got one student who's really strong but he's about an average to low user according to the statistics. So what does that mean? Does that mean he gets to the library quickly? And gets the library resources? Does it mean you know he already comes with so much knowledge and he only needs to cherry pick? Does it mean he can't get at a computer at home? I don't know. ...



some of the international students who are really good students, they're very, very high users according to our stats but would they be anyway and they're just the kind of student that whatever you gave them ... they would use? ... The fact that something is being used, a site, half a site is being used a lot, maybe that tells you that the students are really confused. Or maybe they got really enthused and they wanted to know more. Or maybe it was such a specific thing that they felt that they had to go back and check it.” (L2)

Both L2 and J2 were concerned about the ethics of “... spying on them.” (L2) “It just smacks of Big Brother and policing really.” (J2)

## **Structure**

Interviewees used a VLE because it supported the structuring of content:

“I like the fact that it's, everything all together. You could do the same, I could create a Web tutorial and I have, not using WebCT, but it's so hard to change it. It's hard to make sure you've got the relevant three pages in the right place, so I like that flexibility.” (E2)

It enabled them to furnish students with a structured set of basic materials and a starting point when searching for resources (E1 and M4):

“... providing the sort of general structure and information seemed the most useful ...” (E1)

One lecturer (M2) specifically wanted to use the system's ability to collate student postings within the discussion forum to reduce her workload and encourage students to work in a different way:

“... I wanted to use the way WebCT just collates all the information at the end. And therefore it didn't have to be a series of ... Microsoft Word documents that I just put into one document and then photocopy for them. I wanted to have a system whereby that, the system itself would automate - automatically do that.” (M2)

For F4 use of a VLE meant she could offer a set of standardised materials to students. Something she would have appreciated as a franchise student and which helped her ensure students "... get at least a standardised basic package from the University wherever they may be taught and by ... whomsoever teaches them." (F4) She managed a large teaching team over several sites. F5 said that the structure imposed by a VLE benefited both the students and the lecturer:

"... two things happen when you try to put some material on computer. One, you yourself have to think it through so that material itself is logically sound and clean. And two, because you are dealing with a machine ... once you have done some practice that is going to be identical. So the structure itself becomes so clear and it really reduces the students' cognitive load so much. [...] I think at first year level the more standardised, pre-prepared the better. [...] So the better prepared you are having is less stressful for you as a teacher. And I think that's what things like VLE help you to do it. Because in a way you've structured it nicely, so I think it reduces your stress ultimately." (F5)

This last comment indicated the way the process of placing material within a VLE could be used to create a more clearly structured set of materials which supported students' learning. Interviewees L1 and L2 made comments that underline this:

"... I think it's very good for structuring their learning process." (L1)

Three interviewees (J3, L1 and M1) said that they used the structure within a VLE as a way of encouraging and supporting student activity:

"... lecturing is a very passive experience for the student, unless the lecturer does a lot of hard work to make it active. And therefore what we're trying to move towards and have been trying to move towards for a number of years is much more active learning." (J3)

It is in these last examples that it is once more possible to see an overlap with other ‘course management’ and some ‘facilitation of learning’ categories. L1 said “they can catch up in their own time ... via a structured setting.” This is related to ‘flexibility’, and was also something mentioned by F5 who used the structure imposed by a VLE to offer “... a lot more standardised delivery ...” and the resulting flexible access to enable and expect students to catch up in their own time. J3 spoke about “... active learning ...”, which is related to ‘engagement and activity’. In fact the way interviewees talked about structure and standardisation seemed to indicate a desire to provide guidance and support for student learning. In order to distinguish between comments related to ‘structure’ and ‘guidance’, the former was used to classify comments about giving confidence and a fixed set of core materials that can be referred to at any stage, whereas ‘guidance’ was used when these comments implied an element of responsiveness and communication. This is why it was grouped with ‘feedback’.

### ***Maintenance***

Four interviewees (B4, F4, G2 and K1) said that they had used a VLE because it was possible to update and maintain course resources quickly and easily:

“And it's got the advantage of course that it can be kept quickly up to date ... unlike hard copy.” (K1)

Although one interviewee (F4) did have concerns, in this context, about the transfer of costs to students (this is explored in more detail in Chapter 6 – Students issues).

### **5.3.2 Facilitating learning**

Interviewees described four reasons a VLE was used that were classified as being about ‘facilitating learning’. These were different to ‘course management’ reasons because they were about encouraging and supporting students to become active participants in their own and each other’s learning process. Interviewees said the intention was to provide access to



a wider range of resources, to provide guidance and feedback, to encourage engagement and activity and to build a learning community. The intention was to motivate students to be proactive in exploring and evaluating different resources and interviewee comments implied that a certain amount of interaction with resources accessed online or with fellow students and with interviewees via the online communication tools was expected. There were eight interviewees (B5, F3, G1, G3, H2, J1, J2 and N1) who described the intention behind their VLE use only as aspects of ‘facilitating learning’.

### ***Access to resources***

Interviewees (like E3 and G4) used a VLE because they wanted to facilitate access to a wider range of resources: “... it's useful to increase and facilitate the range of resources.” (E3) This was done by using a VLE as a gateway to the Web (K1). The links provided indicated where suitable resources could be found:

“I think it is potentially useful simply to be able to point people to useful resources.” (G3)

These included links to online archives that enabled the use of primary sources, such as historical documents (L1) and census returns (F2), and better quality materials than were unavailable otherwise (G1 and J1):

“It seemed like there were many advantages to providing resources online to students where those resources existed. [...] books aren't always available in the library and there are ways in which a lot of textual material can be found on the internet, that's an advantage. Other advantages are Web-based material which has no particular equivalent in conventional libraries. [...] access to the Web sites of currently operating media organisations was regarded as quite useful. [...] I'd say the quality of materials that students have access to is higher. And I think that's an improvement ...” (G1)

The use of primary sources was aimed at encouraging students to reach their own conclusions and in this way provide a richer learning experience (F2).

Interviewees wanted to facilitate access to material from different cultural contexts, taking into consideration their students' backgrounds (L2), and to up to date materials (K2 and N3):

“... so much of the contemporary material is Web site based this was a very convenient way of giving students immediate access to a whole range of Web sites.” (K2)

Their intention was to encourage students to use information other than the traditional paper-based texts (F1), to motivate students and to encourage exploration (L2):

“... to build up an ethos of you know that, in a wider cultural, more diverse culture of learning than you know a standard text based format, or not doing anything at all. I mean we actually do find that students who are maybe not very well inclined towards actually reading a book, will go and sit themselves at a work station. And access a whole host of electronic resources which can be as, if not more, useful than the book that we would have liked them to read.” (F1)

There was an element of ‘guidance and feedback’ in some of the comments classified under this category. The fact that interviewees were aware that students needed guidance to find suitable quality resources is one case in point. One interviewee also found a VLE useful when responding to student requests for further information:

“... you can make resources available, for example the other week some of the Christianity students were saying, “how do you find out about fundamentalism?” And I said, well actually I've got some bits and pieces that may be of interest, stuff I've written, I'll stick it on to [the VLE].” (B6)

This is explored further in the following section.

## ***Guidance and feedback***

Comments that indicated an intention to provide ‘guidance and feedback’ were those where an element of responsiveness to student needs was implied. This involved communication, the creation of some content, or the use of a particular tool to provide guidance or feedback. The VLE was used because it made it possible for students to ask questions to clarify a learning issue (as opposed to an administrative or organisational one), outside contact time, or to take part in some online activity that provided feedback.

A VLE was used as a way of responding to student requests for guidance (E1 and K1):

“student feedback revealed things that they weren't happy about or they found difficult. ....: “all that theory” and “all those words”. So that's why I put the glossary in so if I use terms like hegemony or something or economic terms” (E1)

There were a number of comments that referred to the use of quizzes to encourage revision and the reinforcement of key concepts or information (for example E1, F2 and N1).

“ ... we provide multiple choice questions so they can test their knowledge and if, if they get the answer right it says why they got it right and not just, yes you got it right and if they get it wrong it says well, perhaps you should go back and read this and think about what this tells you, ...” (F2)

This was considered valuable because it was a way of providing feedback to students when it was not possible to have access to a member of staff (F4) and where the privacy afforded by interaction with a computer might build student confidence (F1).

Two interviewees (M2 and N1) used a VLE to inform their classroom teaching and improve the quality of face-to-face feedback and support offered. N1 used the results from a set of activities held within a VLE:



“And it gave the class teachers information before the class. Both on which students were in difficulties and which questions were giving particular problems.” (N1)

M2 wanted the VLE to record students’ editing decisions, so that she could review them before they met in the classroom.

Some interviewees implied that a reason for VLE use was to enable them to provide ‘guidance and feedback’ for their students. So J1 said he had decided to use a VLE to provide students undertaking a project module with a forum for feedback from peers, teachers and outside experts. While M4 set up a discussion forum with the intention of supporting students on a placement, to lessen any feelings of isolation and to enable them to discuss issues around an assignment due in when they returned.

Interviewees thought it was necessary to provide guidance because of the amount of information available (G3) and what they felt were students’ underdeveloped critical faculties:

“... my problem with the Net is that it's a fantastic source of information. Well, it can be a fantastic source of information but by and large the students don't have the, you know, the critical awareness about what is a good site and what they should be getting out of a site.” (F2)

One interviewee said that the reason she used a VLE was because: “... I was answering the same question over and over again. And that was one of the key reasons why I have the assignment discussion area now.” (F3) This was something that another interviewee (N2) had identified as potentially useful, although it was just an aspiration at the time of the interview.

## ***Engagement and activity***

Many interviewees wanted to encourage students to become more active. They were critical of traditional teaching methods, which they believed engendered passivity on the part of the student (E1, J3, L1, N1), and of the paucity of contact time (B5). Interviewees used a VLE because it enabled them to create tasks for students to do outside face-to-face sessions, supported collaborative activities (B4, G4) and independent study (E3, G3). An underlying theme was that of encouraging students to take more responsibility for their learning and to be proactive:

“... the more you can encourage people to be autonomous and take control of things then the more they are going to engage with ideas. So I think it, you know, it does you know have scope for getting people to be more proactive in what they're doing.” (L2)

There was a link to ‘guidance and feedback’ because interviewees thought that working through activities within a VLE would encourage students to do the work necessary (B5 and L1), to make contact time more effective (N1) and to give students confidence (M1):

“... this is where I think this kind of approach scores another benefit: that students are better prepared to contribute to the face-to-face sessions than is otherwise the case, because they don't read anything. Or they're not sure what it is they're supposed to be thinking about. But they are here because there are quite specific tests set.” (M1)

Interviewees had identified the quiz facility within a VLE as a way of encouraging active engagement with course content, as well as providing a degree of feedback (F1, F4 and E1):

“... the quizzes in a sense I'm using those to check they've understood theories and approaches. So I mean we look at things like Wallerstein for example. So there's a quiz checking they've understood him.” (E1)



Two interviewees (J3, L1) specifically criticised the passivity of lectures and used a VLE because they wanted to encourage student activity:

“... lecturing is a very passive experience for the student, unless the lecturer does a lot of hard work to make it active. And therefore what we're trying to move towards and have been trying to move towards for a number of years is much more active learning. [...] it took a little bit of time to explain that it's in nobody's interests to stand in front of them for two hours and read material out. That it would be a better use of their time and a better use of our time for them to go and look at the material in a structured way and then link it to the particular tasks they've been asked to do.” (J3)

“... I think lectures are too passive. [...] I think Blackboard gives you more chance of being interactive. [...] if done properly it can enhance the student learning experience. It can actually mean they can work more intensively and they're going to do teamwork, in a structured way. I think if used properly, it genuinely can develop themes that may introduce them to another forum.” (L1)

Other interviewees used activities within a VLE because they wanted to encourage independent learning (E3, G3 and M3) or because they wanted to support the development of specific skills (J2) and encourage the use of authentic materials (F2 and M1):

“I was really rather more interested in really whether it would enable students to learn more effectively. And specifically engage with what it is to - shall I say, to do history and to engage with the methodology and the skills and the concepts of doing history. [...] the researcher can make available, not only the materials, the resources of a subject, but actually can make - in an active sense, make available to the students the very intellectual processes which the researcher has undertaken in order to produce that work in the first place.”  
(M1)

This too was related to the desire to change the way in which contact time was used, for example M3 described how:



“... for the last two years students haven't effectively had seminars. There have been classrooms, one with IT, one without, set aside the day of the lecture on research methods. And they've effectively had to come and do the work.”  
(M3)

In some cases tasks accessed via a VLE were used to replace contact time (this was a deliberate strategy imposed on online learning fellows at University E, see Appendix I).

Two interviewees (B4, G4) used a VLE because they wanted to support collaborative activities:

“... I got the students to work on possible answers to questions in a great block. That was in a teaching room that had a computer in the corner and basically they were doing the talking and I was keeping relevant notes and I just posted the notes there. Which again is part of the same move to well can we get this to be more than just a kind of passive thing of well, here's a bunch of resources that have been here two hundred years, now look at them, can we get them to contribute to them? [...] And they can see what the other group got up to in doing a similar exercise because ... there was some overlap obviously between the groups but they also came up with some things that the other ones didn't ...”. (G4)

### ***Building a Learning community***

A number of interviewees used a VLE because they said that they intended to create what could be termed a learning community. The reasons given ranged from an idea that encouraging a sense of community (E2, M3 and M4) or providing the opportunity for discussion and collaboration outside contact time (B6 and G2) was good, to more specific intentions such as supporting group work (B5, H2), providing a forum for discussion outside contact time (F1, N3) and creating a shared resource (J1, M2). In two cases (E3 and H1) this intention was implied rather than explicit.

Three interviewees used a VLE because they wanted to create a sense of community (E2, M3 and M4). For E2 communication tools were important in helping to create that community, while for the remaining two the existence of a shared resource was a means to creating a sense of community. A further two interviewees (J1 and M2) used a VLE because they wanted to create a shared resource in collaboration with students

“... I hit on the idea of being able to support the projects. And indeed to try and incorporate a product of the projects, into a kind of database that would grow organically so I wouldn't have to put a lot of material on myself.” (J1)

Six interviewees had identified the potential of the communications tools available within a VLE to support discussion outside contact time (B5, B6, F1, G2, H2 and N3). Some were rather vague in their intentions (for example B6 and G2):

“What I had wanted to do originally was to help to create a student e-mail discussion list. That was it, but when I discovered that you could do something like that with VLE-B. Well that was a good reason for finding out about VLE-B.” (B6)

Others had more specific intentions: to support group work across campuses, nationalities (B5) and departments (N3), outside contact time (H2) and to encourage discussion on current issues relevant to subject content (F1). The creation of a learning community had remained an aspiration for some (G2 and N2) and it had proved difficult to encourage the use of communication tools in practice (F1 and M2):

“... they're less confident in using the discussion boards. So we felt we needed to move away from that and offer them something which was less scary ...”  
(F1)

Interviewees' intentions in using a VLE were also varied. Most people described a mixture of management and learning intentions.



## **5.4 Discussion**

This chapter addressed the following research question: “Why do lecturers say they use a VLE?” One aim was to explore whether interviewees used a VLE to fulfil a specific teaching and learning need or because they felt compelled to use a VLE. A second was to investigate whether interviewees in more discursive subjects used a VLE because of the integrated communication tools and a third to identify whether a VLE was used to support student-centred methods.

Those who were interviewed either volunteered to participate or were suggested by contacts in educational development or learning technology departments and by their colleagues. The people who suggested participants would often say that they only wanted to nominate those they considered to be “doing interesting things” or those who had used a VLE for a while, which in this context meant more than a year. It should also be noted that the availability of VLEs was a recent phenomenon at the time the interviews were conducted (2001 pilot study, 2002 main study), so participants could be defined as innovators or early adopters (Zemsky & Massy, 2004).

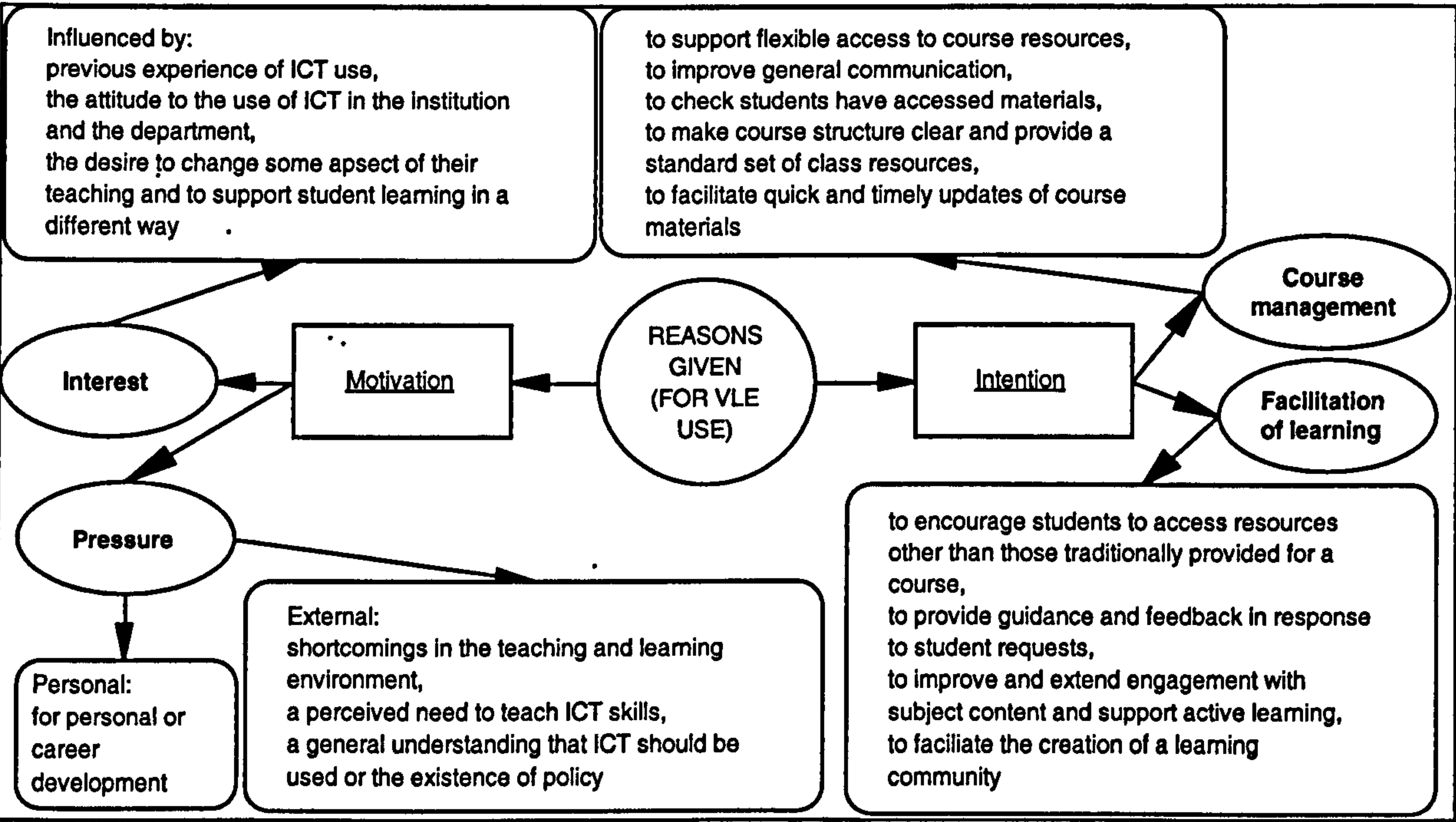
Interviewees’ reasons were conceptualised in terms of their original rationale or impetus for VLE use, their ‘motivation’, and their intended use for a VLE, their ‘intention’.

Interviewees’ original motivation was categorised in terms of ‘interest’ and ‘pressure’ and their intended use was deemed to have a ‘management’ or ‘learning’ focus, but one did not preclude the other and there was a degree of overlap.

The reasons interviewees gave for using a VLE are summarised in Figure 5.1. Each of the four categories was comprised of a number of sub-categories. As this was qualitative data it did not always fit completely into neat, clearly defined categories, there was a degree of



overlap in some comments; that is, they had more than one meaning in relation to the four categories. Interviewees often had more than one inter-related reason for VLE use. There was an attempt to demonstrate the degree of overlap as the data was described.



**Figure 5.1: The reasons given by interviewees for their use of a Virtual Learning Environment**

I expected to find a link between ‘pressure’ and ‘management’ and ‘interest’ and ‘learning’. If interviewees felt pressured into using a VLE the easiest thing to do would be to place course materials within the VLE and use it to organise students. If interest were the main motivator it might be expected that this were because a lecturer had a specific teaching and learning use in mind. However, such a clear link did not exist, this may be because of the interviewees in the sample or the type and focus of advice received. Furthermore, even though their main motivation was classified as ‘interest’ this did not mean that they did not feel pressure from the context in which they found themselves.

Interviewees' interest was influenced by their previous experience, a desire to change some aspect of their teaching or the way they supported student learning and the attitudes towards technology use prevalent in the environment in which they were working.

Interviewees reported that they used a VLE partly because of pressure, although this was due to a perceived need to participate in the development of VLE use, either for their own or their students' need, rather than specific enforcement. Pressure was as strong a motivator as general interest (11 interviewees interest only, 11 combination of interest and pressure, 9 pressure only).

With respect to policy, it seemed that there was actually very little other than a general decision to adopt an institutional VLE. What was interesting was the fact that most interviewees denied any policy existed, but when they were further questioned, as well as in the process of the interview, it transpired that most institutions had strategies in place to encourage use. Indeed 'encouragement' was the word most often used to describe the prevailing university attitude (universities G and M for example). There seemed to be general strategy to try and get interviewees involved, a number of initiatives were used: dissemination workshops (universities N, G and F) and incentives like supported fellowships (at universities E), time off to develop courses (J3, University J Law School), the creation of responsibility posts (at universities B and J) and the refocusing of teaching and learning fellowships to include some element of ICT responsibility (University F).

I found this denial regarding policy interesting. It may reflect the fact that interviewees like to feel that they have a certain level of control over their teaching. While institutions generally (with the exception of J, for example), feel that they need to encourage rather than impose, because this is how they will get interviewees involved (hence the use of incentives). Interviewees felt that 'online' was the way things were going (University M)



and due to the pressures of the job, more students, less contact time, different types of students, use of a VLE was a constructive way to help them cope with these pressures (universities K, B). They were also aware that their students were gaining wider exposure to online environments prior to their university career and interviewees said that students would expect to use online resources.

Interviewees said that they made use of the affordances of the technology by providing access to resources that would not be available otherwise, more responsive and better tailored guidance and feedback and a way that more students could take an active part in their learning. It was also possible to support larger numbers of students. A VLE made it possible to do things not done before, according to some interviewees this was really the only 'valid' reason for using the technology (N1). They showed themselves to be keen to identify 'suitable' use (L2) and were quite willing to question institutional pronouncements regarding the course level a VLE should be used at (B6).

Eight interviewees (B6, E3, F1, F3, G2, H1, H2 and M2) said that they decided to use a VLE because they wanted to employ or explore the use of the integrated communication tools, that is, they wanted to support collaborative working, discussion or provide a shared resource. This number does not include those who found a use for the communication tools at a later date.

The data described demonstrated that among the interviewees there was an intention to make students more active, to support and guide the learning process and to facilitate collaboration, but that a VLE was also used for management reasons. There seemed to be a real concern among interviewees that students were adopting a far too passive role in their own education (possibly, they said, based on the education they had received to date)



and a desire to make them more active. The increased accessibility of materials via a VLE meant that students were expected to take responsibility for catching up on work (rather than asking a lecturer for missing information) and were encouraged use the online activities to revise, reinforce and extend their engagement with subject content.

It was to be expected, because there was little evidence of formal policy imposing use, that ‘interest’ would be the primary motivator for a majority of the interviewees. Moreover, as no one was obliged to take part in this study the implication is that those interviewed were lecturers who felt comfortable talking about their teaching and were already reflecting on their practice. It could be argued that they were already aware of some of the issues around the use of ICT and that ‘dumping’ a large amount of content within a VLE was not considered good practice, hence the focus of comments on using a VLE to better support and extend student learning.

With the majority of interviewees once they had taken the decision to become involved with VLE use they then chose a course or context in which to apply it. This seemed to be dependent on their understanding of what a VLE could offer them or what it could do, which in turn was dependent on the type of support offered and their ICT comfort level. These are issues examined in the following Chapter 6.

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## Chapter 6: Lecturers' needs and concerns

This chapter uses data collected for the trial and main studies to answer the research question “What do lecturers say supports or hinders their use of VLEs to support teaching and learning?” It also addresses one of the aims of the research, namely to identify contextual factors that may affect the use of a VLE. The focus of the interview questions used is explained in the Section 6.1 and the analysis categories developed are listed with short explanations of the data that gave rise to each category in Table 6.3. Sections 6.2 to 6.5 describe that data more fully, with supporting quotes.

### ***6.1 Exploring and understanding factors that support or hinder VLE use***

It was important to explore the context of use because research has demonstrated that this has an effect on teaching approach and whether or not technology is adopted. Prosser and Trigwell (1997) found that lecturers who felt that they had more control over their teaching (what is taught and how) were more likely to adopt student-focused approaches<sup>43</sup>. These approaches were affected detrimentally if the class size was thought to be too large, student diversity too great and workload too heavy. Barnard wrote about an obstacle course of barriers that had to be overcome if further education teachers were to move “from being non-users of technology to being fluent users who could integrate technology into their

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<sup>43</sup> One of the main institutional reasons given for VLE adoption is “the enhancement of teaching and learning” (Jenkins et al, 2001). The assumption made is that this implies the use of student-focused approaches to teaching because of the link demonstrated by research between approaches to teaching, approaches to learning and learning outcomes.



teaching” (Barnard, 1999, p.352). These included anxiety, unfamiliarity with the technology, resourcing, perceived usefulness, personal philosophy, the influence of colleagues and classroom dynamics.

Furthermore as VLEs are thought of as easy to use, enabling a user with no Web page creation experience to set up an online course “... without the need for intensive IT training which had been previously required” (Littlejohn & Peacock, 2003), this was also investigated. Other areas investigated included: the level of technical and pedagogic support and advice available, the ICT comfort level of lecturers, any feedback received from students about the use of a VLE, usability and the need to use alternative or additional software applications because of shortcomings in the VLE employed. Interviewees were encouraged to identify improvements in the system or its environment of use and to comment further about their own experience, at the end of the interview. Although specific questions and prompts were designed to elicit comments about factors that supported or hindered use these also came out during the general interview conversation.

The questions and prompts used are shown below, in Table 6.1 (for the trial main study) and Table 6.2 (for the main study), their development is dealt with in Chapter 4 - Methods.

<p><b>Part 1: Background</b></p> <p>Which VLE ?</p> <p>(What does this term mean to you? Difference between MLE and VLE)</p> <p>Length of time in use (in Uni and personally)</p> <p>Champion / vanguard user?</p> <p>How do other users / non-users feel?</p> <p><b>Part 2: Motivation / Deciding to use</b></p> <p>Where has the inspiration for how you use the VLE come from? (pedagogy)</p>
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<p><b>Part 3: Support / Training</b></p> <p>What technical help have you been given in using the VLE?</p> <p>what previous experience have you had in creating Web pages, using e-mail, participating in discussion lists?</p> <p>VLE push coming from ed tech / IT services / dept?</p> <p><b>Part 4: Tools / elements used</b></p> <p>Are there other ICT tools that you use, why? (i.e. does the VLE have a shortcoming?) Tools don't use / planning to use in future?</p> <p><b>Part 6: Drawbacks</b></p> <p>What are the drawbacks for you of VLE use?</p> <p>What has hindered use of the VLE?</p> <p>Could the resources have been better spent elsewhere - more productive for student learning?</p> <p><b>Part 7: Student opinion</b></p> <p>What has the student reaction been like?</p> <p>(How have you found this out?)</p> <p>(Differences in levels / maturity?)</p> <p><b>Part 8: Change</b></p> <p>Is there anything you do with the VLE, that you would want to change for next year?</p>
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**Table 6.1: Trial main study questions and prompts – contextual factors**

<p><b>Part 2: Context</b></p> <p>Can you start by telling me which VLE you use?</p> <p>How long has it been available for use in the university?</p> <p>How long have you been using this VLE?</p> <p>+ For how many of your courses and at what levels?</p> <p><b>Part 3: ICT comfort level</b></p> <p>I am now going to ask about your IT experience in general. Please give me examples of your use in each case:</p> <p>How comfortable do you feel using a word processing package such as MSWord?</p> <p>What experience do you have in using a presentation package such as PowerPoint?</p> <p>What experience do you have in writing Web pages?</p> <p>What experience do you have regarding participation in online lists or discussions forums?</p> <p><b>Part 4: Training, advice, support and ethos</b></p> <p>What training have you had in the use of the VLE?</p> <p>If something went wrong what would you do?</p> <p>Do people ask you for help if something goes wrong?</p> <p>What advice have you had about using the VLE effectively to support your students?</p> <p>Do people ask you for advice about how to use the VLE?</p>
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<p><b>Part 5: One example of VLE use</b></p> <p>Can you start by telling me about the students who take this module / course?</p> <p>[for example: Is it compulsory or optional? + How many students take it? + What level is it at?]</p> <p>...</p> <p>How did you choose which tools to use from the range available in the VLE?</p> <p>How does all this relate to the course / module assessment?</p> <p>What feedback have you had from your students about this use of the VLE?</p> <p><b>Part 6: Shortcomings and benefits</b></p> <p>Do you collect student feedback about your courses? What do you do with this feedback?</p> <p>Have you found yourself using any other ICT tools or software packages to support your teaching? + If so, can you explain why?</p> <p>Is there anything that would help you make better use of the VLE?</p> <p>Is there any feature of the VLE that is particularly useful for your subject?</p> <p><b>Part 7: Further comments</b></p> <p>Is there anything about your experience in general with the VLE that you would like to comment on?</p> <p>+ Can you give me any more examples of your use of the VLE?</p> <p>Is there anything else that you would like to add?</p>
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**Table 6.2: Main study questions and prompts – contextual factors**

The aim of the prompts used and questions asked was to explore:

- The impact and effectiveness of technical training and support (the effect of lecturer ICT comfort levels, the availability of technical support)
- The effect of the environment of use (institutional or departmental ICT ethos)
- The availability and focus of any advice (emphasis on technology or pedagogy)
- The effect of the context of use (the suitability of use with respect to types of students and courses, student attitudes to changes in teaching methods and expectations)
- The applicability of the VLE provided (functionality and usability)

The effect of environment and context of use was considered an important issue in this research. This is reflected in the number of questions that were designed to elicit relevant data. The answers given were used to create four over-arching categories shown in Table 6.3. The data analysis process is examined in more detail in Chapter 4. Each category



contained a number of sub-categories that described the data. They are also listed in Table 6.3 accompanied by examples of data that gave rise to them, and are explained more fully with supporting quotes in the Sections 6.2 to 6.5 which follow.

<b>Student Issues</b> <ul style="list-style-type: none"> <li>• Skills</li> <li>• Access</li> <li>• Attitude</li> </ul>	<ul style="list-style-type: none"> <li>⇒ ICT literacy levels, ICT training and support (the use of subject contact time)</li> <li>⇒ Physical (disability, making sure they are all able to log on and the availability of campus computers)</li> <li>⇒ Expense (printing of online materials, PC ownership and ISP costs)</li> <li>⇒ Minimalists (motivation and assessment, overcoming the 'does it count?' mentality), attendance (online notes and lecture handouts)</li> <li>⇒ Resistance to changing the way they are taught, expected to become more active and take more responsibility for their learning</li> </ul>
<b>Technical Issues</b> <ul style="list-style-type: none"> <li>• Skills</li> <li>• Usability and functionality</li> <li>• Environment</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Technophobia &amp; the "comfort factor", affected by previous experience</li> <li>⇒ Time to become familiar with the technology</li> <li>⇒ "Clunkiness", linear structure, too many menus, the look of the interface, inflexible names and labels</li> <li>⇒ Easy, quick registration and amendments, the 'closed' community (logging on)</li> <li>⇒ System stability and registration, being able to gain reliable access to the VLE (a stable network)</li> <li>⇒ Technical support, technical staff level of understanding and system expertise (relative to users)</li> <li>⇒ Training (focus on pedagogy or technology), dealing with upgrades</li> </ul>
<b>Pedagogic Issues</b> <ul style="list-style-type: none"> <li>• Identifying purposeful use</li> <li>• New way of working</li> <li>• Changing how you teach</li> </ul>	<ul style="list-style-type: none"> <li>⇒ The suitability or practicality of CMC for face-to-face classes, the use of a VLE within a face-to-face classroom (workshop format, access to resources)</li> <li>⇒ Understanding what is possible and being able to apply it</li> <li>⇒ Visibility, preparation, revision and updating of materials, time to prepare, creating different student expectations</li> <li>⇒ More rigorous validation procedures, focus of support staff, time to support discussion groups</li> <li>⇒ The need to think through what you do, time to implement and support changes</li> </ul>

<b>Institutional Issues</b> <ul style="list-style-type: none"> <li>• Managerial support</li> <li>• Culture and ethos</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Positive attitude to ICT i.e. positive support for change, the provision of money and resources including development incentives, such as time off to plan use and responsibility posts</li> <li>⇒ Concerns about the appropriateness of compulsion and job security, the use of a VLE to alleviate an increase in student numbers</li> <li>⇒ Policy issues in respect of the status or use of Web sites and VLE 'modules'</li> <li>⇒ Colleague ICT skills and use, the existence of a "Community of practice"</li> <li>⇒ Support for teaching innovation and technology use – conflict between teaching and research</li> </ul>
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**Table 6.3: Main study categories identifying lecturers' needs and concerns around VLE use**

The following sections describe the needs and concerns of lecturers using a VLE to support face-to-face teaching. The first begins by looking at the factors interviewees reported were of concern to students and at the way they felt student attitudes and skills impacted on VLE use, Section 6.2. Section 6.3 then moves on to consider the technical issues identified by interviewees. This is followed by Section 6.4 looking at the pedagogic issues raised and Section 6.5 that describes the institutional issues.

There was a degree of category overlap within this data because, for example, network stability and server capacity impacted on student and lecturer access and was affected by the level of technical support and the amount of investment an institution was prepared to make. Therefore different aspects of interviewee comments in relation to this were classified under three categories: student, technical and institutional issues.

## **6.2 Student issues**

Student issues included interviewee understanding of elements of concern to students and factors that impacted on effective student use of a VLE, based on their observations of



actual student use and any problems students encountered, together with feedback received (both informal and formal). Three types of student issue were identified from interviewee comments: skills, access and attitude.

Interviewees reported that student feedback about VLE use was generally positive, although some interviewees (G3, J1, M1, M3 and N1) said that not all students were happy. The complaints received as part of the feedback and evaluation process were about cost (L2), to do with student attitudes to learning (B5, E1, H1, H2 and J2) or of a technical nature (reliable access, usability and having to learn new skills - B5, M3 and N1).

Students resented being used as “guinea pigs” (B5), a feeling exacerbated by the technical difficulties associated with the implementation of a new system, learning a new skill and the need to use a VLE to complete an assignment. Additional student complaints about VLE use reflected negative attitudes towards computers:

“Well they like Blackboard but they, the software is easy to use they always say yes. But they say other things about the computing, you know, which they associate with the course and that any problems they've had like the system going down, too busy, they could never get on to it, all those sort of things that will also come out. And they still say, oh I didn't like computers I've never liked them and that sort of thing.” (L1)

Although these complaints may have less to do with the subject or the teaching than with the technology it was thought that they impacted on the evaluation scores received by interviewees (B5 and M4):

“you're taking your professional reputation in your hands because I had lots of complaints from students about when they tried to log on to [the VLE] and the thing crashed. [...] four or five of these things pretty soon erode your students' confidence in you. You know there's a limit to the number of times you can



say, ooh technical problems. And a lot of the evaluation, a lot of the evaluations began with the technical side of it which was rubbish.” (B5)

E1 pointed out that the familiarity factor could increase the pressure on lecturers because students expect more as they learn how to use the online environment. She was unsure that she could keep up with student expectations in the long term, or maintain the good evaluations:

“The first year I used it, it was extremely positive. I think the unit went from student evaluation of 75% evaluating it’ was very good or excellent, to a hundred percent. [...] Now, I’m finding that the students just want more. That whatever you do they just want more. So it’s gone back down to about 75% I think this year who evaluated it as very good or excellent.” (E1)

Two interviewees (G3 and K1) said that VLE use had led to student requests that all modules or courses should employ a VLE and it was felt that this expectation would only increase as students became more familiar with the provision of online resources and support (F1, J3 and K1)

“... everyone has got a Web presence now. So the whole culture has changed nationally and internationally and at the same time students have had to get used to it. Now, I think ... students who are arriving here and are much more used to the idea that material will be ... in an online environment because they’re getting ... it in all sorts of other environments. It’s not as if higher education is unique in trying to use the Web as a method of delivering material to them.” (J3)

“... for masters levels a lot of students will be coming to University K and to other universities of course with an experience of [a VLE] type basis for learning, so they’re going to expect these things and it’ll you know have a gradual momentum of its own.” (K1)

So although interviewees thought students were generally positive about VLE use, and would in the future expect online resources and support, the feedback received had enabled

them to identify issues that needed to be addressed to help students make effective use of a VLE. These were reiterated and added to in other sections of the interview conversation where interviewees spoke about the way a student's background and experience can affect their attitude and ability to use ICT and impact on the use of a VLE. This manifested as student reluctance to use a new environment and work in a different way and as frustration with technical problems compounded by inadequate ICT skills or a lack of technological confidence. Furthermore interviewees were concerned that expecting students to provide suitable equipment for off-campus access was disadvantaging some and that the move to provide materials online transferred cost from the institution to the student. These concerns are explored in more detail under the following three headings (Skills, Access, Attitude).

### **6.2.1 Skills**

Interviewees were concerned about a lack of ICT skills in certain sections of the student population, particularly older students and those in the later years of degrees. E3 thought that the gap between the two groups of students (new undergraduates and older students) was widening, aggravated she thought, by the way that "... ICT is still in the business of conning people regularly that ... it's easy." This meant that people found it difficult to ask for help and may even give up (E3). This problem of confidence or the technical / non-technical divide is something that is also mentioned by B4 in the context of technical support available to lecturers and so is not something unusual to students: "There are issues around technical people, and I still get technicians sometimes trying to baffle us." (B4)

According to interviewees student weaknesses ranged from complete unfamiliarity with IT to an inability to cope with the communication aspects of online learning (B4 and H2):



“... there certainly are students at level three, two and one who have never touched a computer. They may have left school some time ago so they've probably short-circuited that.” (B4)

This had been exacerbated, in some cases, by the types of subjects studied:

“... generally now, undergraduates come in with a far higher level of ability in using IT than we ever did there are still a significant number of, especially humanities students, that probably have managed to completely avoid using computers other than for word processing work. And if they've done fairly traditional humanities or arts based A levels they've probably managed to avoid using anything more sophisticated than a word processing package.” (F1)

Only one lecturer completely despaired of students' IT literacy levels (this may be because he had a wider definition of what was needed): L1 said that the one thing that would help him make better use of the VLE was “more IT literate students”. He stated that “A lot of them come knowing a bit of word processing, being able to browse the Web. They are totally ignorant in many areas of IT. ... They know nothing about compatibility of systems.” And described a proportion of them (ten to fifteen percent) as “computer phobic.” ‘Compatibility’ in this context meant an inability to cope with working on the different versions of word processing software found across the university and on their home machines (and highlighted problems arising from a lack of investment). Or even to understand that the reason a document could not be accessed may be due to this. E3 also highlighted this as an ICT skill problem. M1 on the other hand saw it as more of an equal opportunities issue

“... some of them do not have the quality of the equipment at home as they have access to here. There is a - still an issue of compatibility here.” (M1)

L1 observed that students were ignorant of working practices that aimed to avoid problems with documents: rules of thumb like frequent saving and working on hard disc rather than



floppy disc. L2 further illustrated the level of ignorance sometimes found with an example from her time as a help desk assistant:

“... stuff like you know "I can't open my document mainly because I've really messed up the D-O-C on the end and put my initials because I thought that looked nice, you know". I used to get queries like that.” (L2)

Interviewees identified fear as a big problem, across the student age range, but there was an additional need to reassure potential students who were not only new to computer use but who may have been out of education for a long time:

“... one of my responsibilities is to run the part time evening degree and we recruit on to that degree people who have been out of education for a long time. People in their thirties and forties and the idea of using computers as part of the learning process, is frightening to many of them. [...] The problem is the people who ... have got real genuine fears, a) about education and 2) about computers. Now you combine the two and that's a big fear. So we've had to be very, very careful about how we build in training for students. And we reassure them.” (J3)

B4 was particularly concerned about the inadequacy and voluntary nature of the training at his institution which he thought could be avoided by students, leaving them without the necessary skills to do the work set. L1 agreed that “there could be more effective IT induction for students.” That provision should be more structured and provide more than orientation. Moreover there was a definite tension between providing ICT training and teaching subject content, as pointed out by J2, L1 and M4:

“The only training that they get is what I'm prepared to give them. And they can go to IT services and ask some basic questions and they can get leaflets. But I'm not prepared to give them hours of tutorial time. I have done in the past. In the first two years of using it, myself and my colleague spent, you

know, an entire afternoon or two giving training to the students. In practice lots of students didn't turn up to it ...” (J2)

“... I had less face-to-face, because I had to surrender time to teach them how to do the WebCT, so that's the basic difference, there was less face-to-face, more face to back of head or ear!” (M4)

These are issues that need to be addressed at a departmental or institutional level.

Interviewees used a mixture of orientation sessions training and peer support (L1 and M1) to help students cope in the new environment, because as E1 put it:

“... I would be reluctant to just let those people go off on their own and assume they were coping with things, because a lot of them don't. And I think we tend to assume that young people are all very technical and they're all better than we are and they're not. I keep waiting for that generation to come through but they're not all like that. And some of them are actually quite scared of it. And they do need their hands held ...” (E1)

The training and support provided varied. It ranged from general university induction programmes (B6, E3, G2, K2, L2 and M1) to modules teaching subject specific ICT skills (B4, G4, H2, J1, J3 and L1). Interviewees provided VLE training and orientation sessions often with the support of staff from a central unit such as the learning centre (B5, B6, E1, E2, F2, J2, M1, M2, and M3) or a colleague (F1). E1 was unusual in that she was charged with inducting all second year history undergraduates in the use of a VLE. Support was provided by printed guidelines (F3, J2 and M3) and ongoing help in lab or workshop sessions (B4, F2 and L1). Only E3 was the exception in mentioning that she had benefited from colleague use of the VLE with students she later taught.

Orientation sessions were necessary because most interviewees were early adopters so VLE use was often a new experience for students. Furthermore interviewees indicated

these sessions were important to ensure that all students were issued with passwords and could access the VLE. A problem with access had the potential to frustrate and demotivate students and is one of the issues discussed further in the following section.

### **6.2.2 Access**

Access issues fell into two broad areas: physical and expense. Physical issues were to do with disability issues and problems with electronic access, such as being able to 'log on' to a VLE and remembering to check for course e-mail, the availability of campus PCs, the reliability of the network connection and the ability of the VLE server to cope with demand. Expense was to do with extra costs incurred by students because they were expected to access materials and participate in learning activities via a VLE, costs such as printing and those associated with Internet connection – providing a PC of sufficient specification and paying for an Internet Service Provider (ISP).

Problems with registration and access were reported as major de-motivators for students (G3 and M3):

“... there has often been a bit of a niggle about getting them registered. To be honest the biggest problem isn't the problems we get to hear about. It's the technical problems that the student encounters, loses interest in the software and never tells you about.” (G4)

Interviewees reported that students seemed to find 'logging on' and following instructions problematic (E1, K1, L2):

“... the university will register them all using their student numbers but I have to make sure that they can follow the instructions which should be easy. But they don't follow the instructions.” (E1)

“... the headache for them seems to be using the password. Once they've got - it's such a simple thing, the staff seem to find it difficult too. They put the



password in and it works and they'll use it. But it seems to throw them for some reason.” (K1)

So some of the training and orientation sessions were followed up with ongoing support in contact time, especially if an interviewee had changed the structure of contact time to incorporate activities using a VLE (for example, F2 and L1). G4 thought that access to a networked PC during contact time was invaluable to deal with easily resolved problems such as difficulties with ‘logging on’ and so avoid disillusionment.

Of course, interviewees said that students contributed to the problem by not attending organised enrolment sessions:

“I had great difficulty in getting some students to actually enrol on VLE-B because they didn't come to their classes or if they did they were handed a piece of paper which said this is how you do it, they'd missed the initial sessions and, and it was up to them to enrol and they couldn't be bothered you know.” (B5)

Access problems were caused by an unreliable network connection<sup>44</sup> or because the server employed could not cope with large numbers of students all trying to work at the same time. This was something that happened in a classroom situation, “The students get very frustrated when it's slow.” (M1) or as deadlines approached:

“I vividly remember being at home and having all sorts of panic messages from students saying, you know we've got this deadline tomorrow and we can't get into VLE-B. And it's because all of them were trying to work close to the deadline that the thing fell down.” (B5)

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<sup>44</sup> Interviewees generally felt that network problems were out of the control of an individual institution: “... servers have never crashed in my experience except for you know very, very exceptional circumstances when the entire University network was down or something like that. But it's very rare and often the catalyst for that is ... the main Janet provider ... goes down more frequently than the University network.” (J3)

B5 found access problems affected intended use: instead of using the communication tools within the VLE he found that students met face-to-face in the Learning Centre to work on a collaborative task.

Complaints about speed of access diminished when servers were upgraded:

“... the university server is much quicker. There were complaints about speed of access but this is really not an issue any more.” (G1)

One interviewee had provided an alternative means of access for an online database, in CD-ROM format:

“When all the students are trying to access this online, it can take about twelve minutes. So that's why I thought, I need a CD-ROM for this.” (M1)

According to L1 ensuring access was one of the most important issues and necessitated a “disaster management strategy” that involved being able to directly access Web pages (instead of through the VLE) to mitigate registration and network problems.

For some interviewees placing materials within a VLE raised equal opportunities issues, because it was recognised not all students would have the standard of equipment to be able to access a VLE at a distance (B4, B6, G1, L1 and M1):

“It was very slow they argued, we don't have access to it on their own computers. All very true, I think about, probably about 30% of students have online access at home. No more than that. I should think two thirds of them have PCs but not with internet access, so most of them do have to come in to the university to use it.” (G1)

“... most people have got, in the first year in halls of residence they've got access to a computer. And about 30% of them I think have got their own computer. So that can be a curse. Because they come in with the most motley collection of computers you've seen in your life. [...] A lot of them haven't got Internet connections.” (L1)

This had the potential to cause isolation:



“They were all written to and told how to access it. And I did talk to the student reps about the issues, about having stuff online for part time students. Because I didn't want to make students who didn't have computers at home feel even more out of the loop than they do anyway.” (E1)

It was interesting that no interviewee expressed concern about ISP costs (unlike those who participated in the pilot study). This may reflect changing ISP price packages and the greater availability of campus PCs or a general acceptance that this is one of the costs of study. However printing<sup>45</sup> costs was another matter. Interviewees acknowledged this could be a problem (F4, K2, L2, M1 and M3), not least because it was perceived as an unfair transfer of costs from the institution to the student (G1, K1, L1 and M4):

“I actually discourage [printing]. But they have a printing allowance from the computing services of about £3 per a head which doesn't get them many. But there's a sort of ethical point here: if you do a course in the history department you can expect to be given course documentation, you know, module handbook and reading lists and you're not expected to pay for it. Same goes I think for the Web. I'm not expecting them to print off anything, because that's unacceptable, passing on the cost to them. We had a discussion about this a couple of years ago. ... and the chap in the computing services, who is a sort of a liaison bloke, got quite cross about it, because some departments are doing that, they are putting their reading lists online, saying well print it off if you want it, ... It's a tax.” (L1)

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<sup>45</sup> Institutional and departmental policies regarding printing were varied: from the allocation of a small number of credits to students at the beginning of a year (K1 and L1) and free printing during contact time only (M1) to a flat charge allowing access to computer lab facilities (F2) and a charge for each sheet printed (B and H). This was the most common situation, but indicates the need for some thought about what students should be expected to pay for. At the time of this research VLE use was not generally compulsory, materials within the VLEs used were usually supplementary to those disseminated in contact time and activities hosted by the VLE did not incur printing costs, but this may change.



“... I have to say that I gave them everything hard copy as well, because you can't expect them to print out all these things at enormous cost. ... there's a transfer of cost motive in it as well and that's not a hundred percent fair.” (M4)

One particular VLE had made printing off content particularly difficult, because the intention was that students should think about what they needed and create their own documents: “Printing VLE-B live is a real pain.” (B4) It was not possible to print off HTML content as the idea was that it should be viewed online or cut and pasted into a notepad facility where it could be annotated or added to by the learner, thereby allowing them to create their own version. A facility called ‘group folders’ was where documents for printing were to be placed.

Some interviewees (K2, L1) argued that large amounts of printing were unnecessary, as basic course materials were often provided and VLE content was available in addition to or as back up for hard copy, rather than as a necessity (G1):

“... firstly I ensure that all material that's, would normally be available in hard copy form is still available. So I give them a unit guide in hard copy form and I also put a copy of the unit guide on to the Web site so they can, if they lose it, if they want to access it they can get it there. [...] I tried to explain to them that this is often material which wouldn't be accessible to them in another form. So if they are choosing to download it and print it rather than reading it online then that is their choice but it's something that wouldn't be available to them otherwise.” (G1)

Although K2 at least did acknowledge that many people had a preference for working from printed rather than screen based material.

Where students were not provided with hard copy the contention was, according to F4, that a printed booklet was not as flexible “you can't update it once it's gone to print” and would

just “get lost in the mire” of numerous handouts at the beginning of a semester.

Nevertheless she had taken the student criticism on board and

“... decided that I'm going to print a one page, double sided card sheet that's got an 'organogram' of the Web site on one side with all the details of the Web site address and, you know, how to log on, on one side and the delivery schedule for lectures and tutorials and readings on the other side.” (F4)

Complaints about printing had prompted other interviewees to think about the type of material that was suitable for placing within a VLE and to reflect on actual use:

“... another one of my concerns that sometimes you're talking, you say ... you can see in your booklet. Well if they don't print the stuff off they can't see. If they do print the stuff off the only thing I've done is save the college some money. And why have it on WebCT if it's printed? So there are certain issues there.” (M3)

It was recognised that some students may need to work from printed materials because of sight problems (M1). Although access for students with sight disabilities was only beginning to be considered by interviewees and their institutions:

“... VLE-B did not have any allowances at all for any kind of disability. This summer we've now got a frames free version where you can change the colour, font size and everything, for people with vision impairments.” (B4)

“Whether somebody who was visually impaired would be able to ... use WebCT. ... I know a bit more now than I did when I was creating my course. And I don't think anybody else ... I wasn't given any instruction. ... I would like to know more, I would like to give it an overhaul.” (E2)

“I was interviewed recently about students with disabilities and I realised that actually we hadn't designed in a particularly disabled friendly way, which was making me feel guilty but at the time I don't think we were very aware of it.” (G3)



It was thought that student complaints about printing and interviewee concerns about access to PCs off-campus were likely to decrease over time, as VLE use increased (G1, G4), the availability of campus PCs improved (G2) and PC ownership became more widespread (B4):

“A concern about equality issues of what happens to people who don't have PCs at home. But I think that one will resolve itself anyway with the level of IT take up nationally. The use of Internet and e-mail services and the take up of broadband, I would have thought it would become like having a telephone in ten years.” (B4)

However, interviewees pointed out that for VLE use to become the accepted norm colleague acquiescence was needed because their attitudes impacted on student use (F3, J1, J3, L1 and N2):

“Another member of staff has had actually extensive computer problems and has communicated that very clearly to students. Basically pushing them not to use [the VLE] to contact him.” (F3)

This is something that is discussed further in Section 6.5.2.

Other access problems were caused by the use of particular file formats for materials students were expected to download or print off, though this may be a function of student technical skills:

“... they complained for instance, this year, ... we had the PowerPoint slides only in PowerPoint mode. And that's very inconvenient to print, because you have to print page by page. So one of the students came and said, can you not find an easier way for us to download this? ... and now they have also PDF.” (H2)



E-mail was widely used and students were allocated a university account on registration. However, the effectiveness of this method of communication relied on student willingness to regularly access this account, something interviewees (B5, E1, F3, G4) indicated could not be relied upon because they either frequently changed accounts or the necessity of checking was not apparent to them:

“Students have multiple e-mail accounts and you don't know which ones they are using. We don't even know whether they use our [University F] standard e-mail account.” (F3)

One of these interviewees had taken elaborate measures to try and reach as many students as possible:

“What I do in seminars early on is I get them all to write down their favoured e-mail address and then I've e-mailed, so I've got a kind of list of the e-mails of everyone who's attended the seminar and if there's a rearranged seminar for any reason I can e-mail everyone in it and tell them about it.” (G4)

Although even this was not foolproof because of frequent address changes. If the VLE e-mail was separate to the generic, university allocated one (something that afflicted WebCT users in particular, at the time of the research) this added to the problems for interviewees and students (E1 and H1):

“... we don't use the WebCT e-mail at all because students don't want 3 or 4 e-mail boxes. Because then you start thinking, now where was that e-mail? Was it in the WebCT or was it in my work or was it in my Hotmail account? You end up with 10 e-mail accounts. So people prefer to keep one. So we asked them, what e-mail do you want? So when we set up a distribution list we put their preferred e-mail address in.” (H1)

This indicates the necessity of making it clear to students that accessing their university e-mail is in the same category as turning up to contact time. It is one of their responsibilities.

### 6.2.3 Attitude

Student attitudes to technology and to learning affected the way interviewees were able to use a VLE. For example, B5 found that students subverted the intended use of a VLE because of technical problems and that they complained bitterly when the server could not cope with the amount of traffic when an assessment was due in (see comments under Access). Some of the students at University M were better able to cope with technical difficulties because they already had experience using different software packages and accessing materials from a network drive, although this led to them questioning the purpose of VLE use as well:

“So they're used to going in here, to get things electronically. So that to begin with they won't necessarily see why WebCT might be better.”(M4).

This demonstrated the need to explain carefully the purpose of use in order to encourage students to move away from the familiar and to learn a new skill:

“... I think it's sometimes really hard for students to learn two things at once. So if you give them a new format, it's difficult for them ... dealing with the format and the content at the same point. And I think that if you give them a choice as to whether they want ... to design a Web page or write an essay, chances are that they would go for the essay because at least ... they would know what they were up against. ... I think it's something that ... has to be addressed within the academic plan of the module. You have to at least give a couple of weeks to the learning of the new skill before you expect students to just engage with it.” (M2)

Interviewees argued that the same care needed to be taken when deciding which students should be asked to use a VLE. B6 disagreed with a policy to target VLE use at first year undergraduates because he could not assume that they had the necessary skills. He thought it would be more appropriate to ask level three students to use these new tools because they at least “... ought to have been able to use the Internet because they actually had a training

session on the research methods module.” M3 on the other hand thought it was better to start with first years because they did not know any different (M3).

Students’ reported attitudes to computer mediated communication (CMC), other than e-mail, were interesting. No interviewees found it possible to use the ‘chat’ synchronous communication tool successfully because, as M3 pointed out, there was little need when students and lecturers were already scheduled to meet face-to-face. H2 found that this impacted on the use of asynchronous communication tools also:

“Curiously they do not use CMC<sup>46</sup>. ... Even after being prompting, ... I suppose it's not surprising. There are much better ways to communicate if you are all in the same kind of environment on campus, if everyone's around.” (H2)

It is worth bearing in mind that some of the advantages claimed for the use of CMC are based on use in distance education where CMC compensates for a lack of face-to-face contact. Moreover some of the student antipathy or reluctance could be attributed to lecturers not being sure how to make best use of these tools (something discussed in Section 6.4.1) and therefore not making it clear to students why they are being asked to use a VLE in a particular way.

Interviewees were keen to point out their impression that students want (B4, F1, H1) and expect (G3) face-to-face contact:

“... they really actually like meeting tutors face to face which isn't a surprise.”  
(B4)

“... face-to-face you know the time is still important and the students don't actually want to lose that. I mean we have actually said to students, what

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<sup>46</sup> Computer Mediated Communication that encompasses synchronous and asynchronous communication tools such as ‘chat’, discussion forums, discussion lists and e-mail. In this context H2 is referring to the use of discussion forums.



would you prefer? And they said a mixture. ... they'd like to combine that with a more interactive approach, you know to interact with a machine rather than with us all the time.” (F1)

“... it was certainly felt our students expect face-to-face. ... A lot of our students are either making things or writing things. And social interactions are important ...” (G3)

They claimed that students resisted moves to completely online courses. For example B4 said that numbers had declined when he converted an existing course to an online course, only twenty students enrolled rather than the normal sixty odd. One of F4's students moaned that other “modules provide booklets which I think are more useful than simple putting everything on the Net.”

Interviewees explained that their own use of a VLE was in order to supplement and support the teaching or extend the learning that took place face-to-face. This was not so strange as this mode of use was what this research was designed to investigate. They felt it was important to maintain the face-to-face element: “We decided the face-to-face things were very useful. Otherwise the tendency is for them to disappear off.” (F2) This issue is discussed in more detail in Section 6.4.

As interviewees wanted students to participate in face-to-face sessions they were concerned that student attendance would drop if all the materials were available online beforehand. This was something that two interviewees had found to be the case (F5 and N3). Interviewees were worried about the lack of contact with students that resulted, the possible implications for job security (more of this in Section 6.5) and the effect on student motivation:

“... if you're using Blackboard in a campus setting you can't just put up the stuff, exercises or whatever and then go off and do your own thing. They won't

do it. They absolutely won't do it. A few enthusiasts will but most of them won't. Some will even claim they've never heard of it.” (L1)

Strategies to prevent this included re-versioned lecture handouts (L1) and making students turn up to class to get solutions to and feedback on problems set and worked through online (N1).

N3 had provided full lecture notes online with the intention of changing classroom interaction: “... they wouldn't need to take notes in the lectures, ... And they would then listen and ask questions.”(N3) However, she had not yet thought about the value of presenting a lecture if the material could be absorbed in written form. And another interviewee found that students actually found note taking a useful part of the learning process: “It's not helpful to separate the written record of it from what they're hearing, from their point of view.” (L2)

F4 thought that absenteeism was symptomatic of student attitudes generally, rather than a function of VLE use: “they're not turning up at other lectures that don't have VLEs either.” And “given that you've got base materials on the Web that they can use and refer to whatever texts they're looking at” a VLE provided “a fantastic opportunity, when you see them face-to-face, to engage them at a different level.” The main problem she said she had was with team members who were finding it difficult to adopt a more active teaching style.

It was interesting that students too thought attendance problems arose out of VLE use. In a comment recorded on one of F4's evaluation sheets a student said “People use it as an excuse for not attending.” Although F4 disputed the perception “that they're not attending because it's all online. The reality is that they cannot not attend and pass.” And contested that “these people that are not attending ... are not attending traditionally delivered modules anyway.”(F4) This indicated a wider problem and may also reflect the same



student irritation spoken about by F2 when analysing why students may not participate in online discussions:

“I think if you have two or three who are willing, who right at the start are willing to be actually involved in the bulletin board discussions then other people will do it. But if there's a couple of weeks where nothing's happening and even the enthusiastic students are reluctant to commit themselves, either because they don't want to seem to be you know doing the work, or because they think if they put their opinions up other people will just use them themselves. We've tried to overcome that by saying if you do put intelligent comments up we will give you private, individual e-mail feedback. I mean that worked last year but it didn't work this year.” (F2)

The implication is that students are competitive and do not see why they should work hard for someone else's benefit. That they like to get credit for effort expended, including participation in both the face-to-face and online environments. In addition this comment highlights the difficulty interviewees had in understanding why something works with one cohort but does not with another set of students.

One solution to non-participation interviewees used was assessment. However this created a tension between a reason given for much VLE use (to facilitate access to a wider variety of resources and ideas and to encourage students to 'go wider' than conventionally possible - see Chapter 5) and student reluctance to do things that “don't count” (E1). Students wanted tasks to be assessed, but some interviewees resisted because of different skill levels (M4) and as it was not possible to guarantee equality of access (E3).

Interviewees who incorporated assessment or who were thinking about it did so because of concerns about student motivation (B6, L1) and in order to encourage them to change the way they worked (E2) and ensure tasks were completed in the way the interviewee envisaged (M2):



“So I've made it part of the assessment that they will be expected to use the tools, for their group work, because they'll meet together face-to-face because they're campus based students. But they will be expected to make some use, to share work in progress.” (E2)

“... the other thing about students of course, is that they're always anxious to do nothing. I mean they are very apathetic. So you have to build in ... things that force them to do tasks. Which means they have to be assessed.” (L1)

“... if I make it part of ... one of the assessments ... I could shift, do a minor amendment to the module and shift it so, instead of writing an essay they wrote an online document of some sort. But it's just - it requires attention rather than just - saying "it's their fault, they didn't do it properly!"” (M2)

Not all interviewees were concerned about the affect of VLE use on student attendance: B6 said this had been a colleague fear but for him had been outweighed by one student describing the VLE as “... her lifeline ...”. (B6) F1 also found that students appreciated the flexible aspects of the online environment when absent, especially “... as time went on and they were beginning to maybe miss the occasional seminar ....” (F1)

Interviewees thought that students perceived learning supported by VLE use as ‘hard work’ and ‘difficult’ (B5, E3 and H1) and reported that there were grumbles about the amount of work students thought they had to do (E2 and J2). One reason may be because using a VLE involved more active learning, that is, students had to work to find out information that they expected to acquire in lectures and complete activities designed by their lecturers: “Although they're used to ... taking in those medias (sic) whether it's cable TV, TV, cinema, DVD, passively and this is an active process.” (M3) Another may be to do with information overload: by providing access to a greater variety of resources students may feel they have to view or absorb all of these, instead of making a selection. Once again this indicates a need to make it clear to students what is expected.

One interviewee described the problems he had encountered when first attempting to get students to change the way they learnt and to use a VLE:

“... there’s a culture change that had to be undergone ... students I think perceived initially Learning Space as part of that negative culture change ... “this material would, should be told to us in lectures. Why should we have to go and look it up on a computer?” And it took a little bit of time to explain that it's in nobody's interests to stand in front of them for two hours and read material out. That it would be a better use of their time and a better use of our time for them to go and look at the material in a structured way and then link it to the particular tasks they've been asked to do.” (J3)

Another explained that his students “were rather shaken” when he pointed out to them that “it’s a novel experience for me as much as it is for you.” That “students like certainty and they don’t like being plunked into uncertainty, which this can do.” (M1) Change was particularly difficult for foreign students because “for ... non-European students, this is a very strange way of teaching a module. ... They expected ... more directed learning basically. They expected more lectures.” (H2)

Interviewees reported that students did appear to be enthusiastic about some activities. For instance, F4 and L1 spoke of student enthusiasm for quizzes set up using a generic VLE quiz tool, which of course required them to be active, but also provided immediate feedback. Although G3 had previously found students resistant to multiple choice quizzes “Because the essay is very much the form of assessment. ... we do have presentations, but on the whole writing ... and English, go together.” (G3)

It has already been reported that evaluation scores and attitudes changed as students became more familiar with a VLE. E1 said that evaluations were not as good over time and F1 described how the use of discussion boards waned, despite being “very successful to begin with” because “as happens with a lot of projects the novelty wears off with



students fairly quickly and it fizzles out.” Meanwhile interviewees at universities B and G reported that the level of complaints received decreased, as VLE use became more widespread.

### **6.3 Technical issues**

The technical issues interviewees spoke about related to personal, technological and contextual factors and were classified under three headings:

- interviewee ICT skills (the ability to cope with the technology or their comfort level),
- the usability and functionality of a VLE (the ease with which they could make use of a VLE) and
- the environment in which a VLE was used (the reliability and robustness of the system used, the training and technical support offered).

These issues were inter-related because the advice received via any VLE training sessions affected an interviewee’s understanding of what it was possible to do with a VLE, as did the amount of time they were allowed to familiarise themselves with the VLE in use. The training available inevitably affected their ICT comfort level. There was a degree of overlap with other categories: reliability and registration issues frustrated interviewees as much as their students and although the processes used and investment in infrastructure needed were classified as institutional issues (Section 6.5) these also impacted on the usability and functionality of a VLE.

#### **6.3.1 Skills**

All the interviewees said they had experience of using standard word processing software, indicating that they felt comfortable with its use for the preparation of research papers and course documentation. They had access to networked desktop PCs as part of the office



facilities provided by their institution (something which had lately become the norm).

They used standard university e-mail packages and were familiar with the use of the Web for research.

Comfort level and experience with ICT affected interviewee's VLE use and was identified by them as a potential barrier for colleagues (G1, L1, L2 and M3):

“... skills in IT are quite uneven across the university. It's not really - some people are now just about happy with word processing and using e-mail and that's it.” (G1)

“... it wouldn't be an over estimation to say at least fifty percent of the academic staff here would probably describe themselves as struggling with ICT.” (M3)

F4 said that one of the reasons her distance learning material had remained paper based was because “... other colleagues ... are complete technophobes ...”

One interviewee described the main barrier to VLE use as her own “technophobia” (F1) and another (E1) said “I'm not a computer person”, said finding out how to use a VLE as “a steep learning curve” and coping with changes, caused by upgrades in the software was “very stressful”. In fact E1 summed up nicely the different pressures on lecturers who decided to use a VLE:

“... I'm basically an Apple Mac user. And so there were sort of several mountains to go over because ... I'd sort of used Windows, but at a very basic level. And so I had to kind of sort that out in my mind and sort out HTML, sort out WebCT and also think about what I was teaching. So it was quite a steep learning curve.” (E1)

Two further interviewees described learning how to use a VLE as a “steep learning curve” (E2 and N3) and one other (M1, page 244) used this phrase to describe the different

pedagogic skills he had to learn. M4 also found that she had an extra burden because she was a Mac user learning how to use a PC based system.

A VLE was supposed to enable a user to create and organise ‘pages’ of content online as well as to set up links to further resources and provide access to the synchronous and asynchronous communication tools through one password protected interface. The idea was that a user would not need a higher level of technical skills than knowing how use the ‘save as HTML’ command in a standard word processing package. All the intricacies of creating what was in essence a course or module Web site were automated through a series of menus. B4 was of the opinion that anything more than this would deter staff and indeed only a small proportion of interviewees admitted to knowledge of HTML despite having successfully created VLE course sites.

Interviewees created content by using anything from a simple Web editor like Netscape Composer to Web authoring packages such as Front Page and Dreamweaver, either because they chose what appeared to be the most convenient tool for them or because their institution suggested that this was the way to create content. Nonetheless several interviewees had found an understanding of HTML useful so that content could be edited (G4, M3) and displayed even when there might be problems with accessing the VLE (J3, L1), suggesting that there may be a role for wider knowledge.

Learning how to use and set up a new system, no matter how user friendly, takes time. Finding this time, along with the time to revise and review courses already created, was a commonly voiced need. It was identified as a particular problem for part-time staff (M2) as they rarely had the time to become familiar with new systems and had wider implications for innovation attempts:

“... in this department we rely heavily on part time tutors and we don't have enough PCs for part time tutors, we don't have extra resources to train part time tutors. Part time tutors are expected to quite literally, to jump on a module, running. They have to have gathered speed, ... in order to begin teaching, ... so it becomes like the students really. If they are being asked to learn a new skill at the same time as deliver the content. That becomes quite difficult for them. ... innovation is very difficult. And it's not just electronic, you know, it's all kinds of things. Because you can't readily get everybody up to speed. So it's not just a simple the use of resources issue, ...” (M2)

A change in the version of a VLE or in the VLE used, necessitating re-learning and the re-creation or re-entering of materials, was a source of anxiety and inhibited further development (E1, J1 and J3 were concerned about future changes and H1 hoped that she would have access to training if this were to happen). Although this was, to some extent, unavoidable and inevitable, as software changes, it underlines the need for these new pressures on lecturers to be taken into account and provision for adequate support and training to be considered. The training and support provided is discussed below (Section 6.3.3).

### **6.3.2 Usability and functionality**

It should be noted that the VLEs used by interviewees were constantly evolving (sometimes in response to their complaints) and that some criticisms may no longer be fair or were not fair at the time. Nevertheless the criticisms described here aim to reflect shortcomings identified by interviewees and if unfair could at least be said to represent the level of knowledge and understanding of users and those who supported them at the time.

Interviewees had learnt to compensate for some shortcomings over time (they described getting used to a VLE - B4) and as the software evolved some thought it became more user friendly, although it was not clear whether this was fact or as a result of familiarity. Few



interviewees admitted to having problems uploading materials and creating a VLE 'site' or course area, rather it was more a case of trying to decide which elements of a VLE should be used and judging the relevance or usefulness of them: "There's still features that I don't use. I just use what you need." (E2) (more of this in Section 6.4). They did however express irritation by the way materials had to be uploaded. For example, H2 disliked the numerous menus that needed to be negotiated and two interviewees complained that restructuring, revising or renaming elements of a course meant having to reload materials (K1 and L1).

The level of irritation and complaints appeared to relate to the way in which a VLE was used. For example, G2 who used Blackboard to manage access to course documents, as an electronic "... archive, come filing cabinet ...", and to set up a student e-mail list "... to e-mail them quickly ..." found it very easy to use. F4, on the other hand, used WebCT "... primarily ... as a management tool ..." and found that it did not enable her to produce good reports, it was "not straightforward to use. ... when you want to look at things like how many students have accessed quiz so and so it's very difficult to do. You can't just pull reports off ..." (F4) Complaints about the unreliability and awkwardness of use seemed to be predominantly from those interviewees who had tried to use a VLE for more than its ability to hold and display content and who had tried to integrate the use of other features into their VLE 'site'. Features such as the discussion forum or the quiz tool to set up a series of multiple choice questions.

The skill level and understanding of an interviewee impacted on usability so for example the need to use HTML conventions such as 'tags' was considered a problematic:

"putting in multiple choice questions and so forth. ... again VLE-B is not friendly because if you want to do something in the text box like a new

paragraph you have to put the tag there; it's back arrow, slash P, forward arrow.” (B4)

There were other complaints about the way in which WebCT required data to be input in one discreet chunk when posting a message in a WebCT discussion forum:

“... for some reason you couldn't insert a big message in the box. ... what it turns out to be is you have to ... copy and paste it in [from a word processing package] in one manoeuvre and then it can take umpteen thousand words, but if you try and do it in two manoeuvres it can't.” (M4)

N3 (also using WebCT) had encountered a similar problem when trying to add sound to text based content and become frustrated.

When interviewees said a VLE was “not user friendly” they appeared to mean “it's not like the system I'm used to using” or “it's too complicated; it's trying to help me too much and doesn't let me take short cuts” or “it doesn't let me decide how I want things to look”. So for instance more competent users were frustrated by the need to navigate numerous menus when uploading: “... it's a very cumbersome way of doing things.” (H2) Other interviewees were irritated that they were unable to change the look and name of some aspects of the interface. For example, the labels on radio buttons (G2, K1), the name of the VLE tool areas and system generated headings on built in forms:

“... personal profiles. ... we were told that could be customised ... at the moment it asks them for their hobbies and interests whereas I wanted to customise it ... I want them to talk about what they think about this area or what their background is, integrate it into their course.” (J1).

Four interviewees (B4, E2, M4 and N1) used the term “clunky” to describe the VLE interface or the way it would not interact with other university databases: “It was clunky for doing what we wanted to do. ... We needed to get ... WebCT and the timetables



database to interact ...” (N1) Comments about “clunkiness” once again implied a need to factor in time to get used to the idiosyncrasies of a new system.

Problems were created by WebCT having a separate e-mail function within each module or course set up and have been discussed above (Section 6.2.2):

“They have to log in and go and post something and that ... is one of the things that prevents effective use of a VLE. If it's ... something where they are required to do something different to get in then it's going to be a lower priority.” (H1)

The way in which a VLE forced content into a linear, menu-based structure was criticised because it went against what was considered a benefit or positive attribute of Web use, being able to create your own path through the materials:

“... the Web Internet based interface allows students to have ... almost like an indexing system but everything visible at the same time. Which WebCT doesn't enable you to do. Because WebCT is very much hierarchical, linked by main topic heading and then by subheadings.” (N2)

Consequently this lecturer had only used a VLE to control access to a Web site.

The ability to restrict access to a VLE site to those registered on a course or module was considered both a benefit and a barrier. It afforded an element of privacy and the possibility of creating a sense of community among users and it was difficult to provide access for visitors and support collaboration across institutions and courses (see page 250).

B5 had tried to use a discussion forum to promote the sharing of ideas. He was aware that:

“... if they are anonymous then it sort of takes a lot of pressure off them. And they feel more able to contribute. It actually gives them more confidence in expressing themselves because it's not that obvious who they are so they can experiment etc.” (B5) However he



had been thwarted because the VLE did not "... allow for anonymity because your student name appears ...." (B5)

Password access was dependent on the currency and reliability of the related database (something discussed in Section 6.3.3). One interviewee felt that this had a negative impact on recruitment possibilities where compared with a shared network drive that was accessible to all subject students (E2). Others pointed out that this demonstrated the importance of deciding what material should be for internal and external consumption (B6 and L2). It was also felt that the 'closed' community of a VLE contradicted some of the claimed benefits of online learning, such as access to a wider community. It had proved a barrier to collaboration with other institutions in at least one case (H2) while making visitor access difficult in a further two (G4, J1) and hindered collaboration across year groups (B6) unless it was possible and acceptable to provide a generic password (M3).

### **6.3.3 Environment**

This chapter has already described the way unreliable access impacted on VLE use. Major frustrations were caused by unreliable access due to network or server problems, all of which tended to be blamed on the VLE in question and were exacerbated by technical tinkering (B4). It caused students to become disillusioned and de-motivated and it affected lecturer reputation as they receive the blame for system failures and inability to gain access to the promised resources (see B5 and M4 comments on page 197). Some interviewees had devised strategies to mitigate this problem, for example the use of a CD-ROM by M1 (see page 205), L1 on the other hand had arranged that

"Blackboard links to an external Web page, it doesn't link to uploaded documents. ... it's better just to put down links in Blackboard to external Web pages so that everything can be then got at if Blackboard goes down." (L1)

This also enabled students to gain access in event of registration problems denying password entry to the VLE. However this made two assumptions: that it was possible to place Web pages on an alternative server unaffected by these problems (this was not possible where a university had stated that only the VLE would be supported, as at University G, or an interviewee had run out of university allocated ‘personal space’, as with B6<sup>47</sup>) and that an interviewee had the necessary skills.

Interviewees were irritated when they spent time preparing materials that students could not then gain access to and planned online activities that could not take place (B5) and at having to field the inevitable complaints:

“Now actually the server ... that this, the WebCT is on is quite reliable. ... But as soon as it crashes there's a crisis. That's when I was going to do my work. And there are times when you just get sick and tired of it.” (M3)

Access problems seemed to relate to server capacity (the largest number of student complaints occurred around the time of a deadline and when a VLE was used during class time) or to problems with registration. B4 complained that “response time [was] a bit of a nuisance” when trying to open discussion threads. It meant those students unprepared for it kept on clicking on the open and close thread icon (which changes from a plus to a minus) causing them to think that the system was malfunctioning. F1’s students had encountered problems trying to log on to the VLE, despite correctly following instructions: “... the big problem’s with the system actually being up and running constantly. We’ve a lot of down time.” (F1)

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<sup>47</sup> This issue of where to place content pages, within a VLE or on a general Web server, was something being discussed at University F.



The use of a VLE during contact time (for demonstration, delivering content and conducting activities) was prevented by lack of an easily accessed network connection and by the unavailability of necessary hardware (B4 and J2). It was clear that not everyone enjoyed easy access to a computer suite, lab or “node” which made it possible to conduct activity sessions:

“... having a computer node in this building, which is the same building where all our students have their seminars and lectures, is incredibly useful rather than having to frog march them to the other side of campus.” (F1)

Or had the opportunity to locate them self where the best facilities were:

“... we're not in the faculty with other vocational subjects. We used to be, [...] We moved so we could stay on the city centre site and come into this building and have the IT resources.” (E1)

Interviewees were generally happy with the level of technical support they had received when beginning to use a VLE but wondered how more users would fare: “It works for the moment yes. I'm not sure about its long term effectiveness, especially if more colleagues do become more enthusiastic about using virtual learning environments ...” (F1). In some cases interviewees found that they knew more than the technical staff or were learning with the technical staff: “... the faculty technicians come and ask me.” (F5)

“... it's also ... quite a steep learning curve for them because they really have been starting to use the technology at the same time so they're sort of one step ahead of us I suspect.” (N3)

According to B4 this situation was unlikely to change because “They just don't pay them enough.”

There was a difference between the level of help offered when setting up VLE use and the technical support available later. Speed of response was important (E2). The adoption of a



call centre methodology to sort out IT problems was criticised as not being responsive enough (B4 and J1):

“You have to log a call and I get, sometimes you end up explaining it and then the person comes, you have to explain it again and - you don't know when they're going to come.” (J1)

It had been subverted by some interviewees so that they could get immediate help, though this again leads to questions about the way support may work if and when there are more users:

“... I usually just call a person ... I know. I mean I think one of the things I do think we should know is how to use our institution. So I don't bother often going through help lines. I'll ring the appropriate Web person or Web development person and it's usually fairly easily sorted.” (M3)

Difficulties were caused when it was not clear who provided support or if it was necessary to deal with different bodies when seeking help:

“... we have a group which runs the servers essentially so if I have any problems with the servers I would go through them. We have a half post here who ... And then there's a guy who runs the database, he's [at another site] ...” (F2)

“That was a real problem. At one time [the VLE] was kind of a separate development outside of our IT services people. It's now integrated into IT services.” (B4)

“... I still find an awkward divisional of labour. There's the Learning Development Centre that helps with the preparation of learning materials and all the training issues around that. But anything that's a technical problem we have to refer to IT services in a different way and that can take longer. And I'm forever getting confused as to which one I should ask. I find it rather frustrating.” (J1)

F5 said that he “would be a lot happier if these sort of facilities were at faculty rather than university level.”

The provision of training and orientation sessions for lecturers who wanted to use a VLE was varied. It depended on the focus of institutional strategy aimed at getting lecturers involved with VLE use and what it was possible to achieve with the resources and staff available. For example University B used School based teaching fellows to support VLE use, university E used online learning fellowships as catalysts, universities G and M provided online training via the VLE to build up the number of users. University N provided one-to-one help, although there was some doubt that this level of support would continue: “They're increasingly offering [training] in groups ...” (N3).

Interviewees at two institutions said they had not had any “formal training” for VLE use (F2, F4, F1, H1, H2) because suitable training was not available. Interviewees at university F had suffered in particular because the central unit set up to support the use of technology in teaching and learning and instrumental in helping to set up initial WebCT use, had been disbanded in what “... was obviously a cost cutting exercise.” (F4). L2 did not think enough attention was paid to improving the IT skills of existing staff members.

Interviewees had undertaken different levels of training. It depended on what was available, what they thought they needed and what they had the time to do. L1 had taught himself and “by the time it was offered I already knew it.” According to H1, G1 and L1 learning how to use a VLE was easy, so they were self-taught. G3 was not involved in the piloting of the VLE, therefore did not feel obliged to attend training sessions offered “Time being very precious.” While M3 thought “I daresay if I had the time some training wouldn't be a bad thing.”

Take up of available training was affected by an interviewee's approach to learning, as well as their attitude towards and experience of ICT. Some could be described as competent, self-taught users who preferred to learn by experience and trying out software (G4, J3, L2):

“I tend to find, in general that the best way to learn how to do computer things is to play with them yourself.” (G4)

Some would have preferred to be introduced to new technology before trying it out for them self and resented the time it took (F3 and H1):

“I've had to learn by myself and it's been a bit of a problem. In a sense that I had to go through learning at times when I clearly could do with the time.”(F3)

There was evidence that these early adopters did subsequently supplement institutional support by taking on a support role for colleagues. This happened formally, in that they were appointed to teaching and learning roles within their departments, often with a focus on the use of ICT (B4, E2, F3, G1, J1, J3) or informally, by way of dissemination events (F4, M3) or by being someone people approached when first thinking about VLE use (E1). The development of a community of use is something that is explored further in Section 6.5.2.

Interviewees valued support from people who could sort out any technical 'glitches' while they concentrated on the pedagogic aspects of use:

“I think it's very important to have good support for this, because as a lecturer ... you want to be putting your time into thinking about content and pedagogical issues, you don't want to be worrying about computer glitches.”  
(N1)

There were those who thought some colleagues would only be happy when they had someone to deal with the technical side completely, although they questioned how this might work:



"I think really what a lot of my colleagues would expect is that ... this will only work when there is ... some sort of technical facility which will do it for you. You won't have to produce your own Web sites - you just kind of give them the material and it will all be done for you [...] I think it's very difficult to imagine how a technical facility can produce qualitative teaching material. Unless your idea of what that teaching material is, is very kind of simple. ... if it's just ... reading lists in another form ... clearly it's not just about that is it? And certainly researching Web based material that's appropriate to your topic can only be done by yourself and not by some remote technician." (G1)

F4 argued that this specialised help was needed because of the 'technophobia' of colleagues, workload pressures and the skills necessary to prepare accessible materials. Progress at university F had been limited since the removal of the central unit supporting VLE use:

"... it was extraordinary I thought that they got rid of [the online learning department], ... since it's disappeared, pretty much the University's provision of e-learning has stood still." (F2)

Progress in general was limited by what interviewees termed "lack of time" and affected by the level and type of support available:

"... I'm under pressure, I have to do a lot of expansion of a lot of things. You can only really do, well you should I think only do one or two really big things a year. So - I might. It depends how much support there is. If they can set up the blank module quite fast, set it up for me really fast." (M4)

Initial help, when available, often involved help thinking through the way a VLE could be used (the pedagogy of use). The highest praise was reserved for support people who allowed interviewees to explore use, providing suggestions and solutions as required and who were able to understand the teaching strategies interviewees aimed to support (E1, E3, M1, M4, N2):

“... the Centre for Learning and Teaching Technology have been very, very proactive in a sense. They work towards our needs. Rather than saying, I don't think we can do it that way. But they will tell you what the limitations are.”

(N2)

Advice received during training sessions could influence the way in which a VLE was used and which elements were used:

“We didn't use the facilities for online posting of student work. ... we'd been told that it was quite clunky.” (N1)

It was difficult to separate out the desire for pedagogic advice from the need for technical familiarisation sessions, because to quote E1 (page 219) “... you are learning how to use the technology and thinking about the teaching”. Where interviewees had received one set of advice or support they identified a need for the other:

“I think the first one was showing us what you could do with it educationally. [...] But maybe it's the technical help that people really need on it, because I don't think it's self evident how it works and you do need that sort of training.”

(B6)

Several interviewees identified a need for more advice about how to use a VLE effectively (E2, H2, J1). H2, who had previously been a programmer, thought “... the training that would be required, maybe, would be on the pedagogical ... and design side.” J1 lamented the lack of any “... mechanism where knowledgeable staff would come and look at what you eventually did and kind of helped you build on it and share their, say have you thought of doing that?”

## **6.4 Pedagogic issues**

Pedagogic issues were not about the actual way a VLE was used to support teaching and learning (that is something dealt with in Chapter 7), but about any difficulties interviewees

encountered when attempting to apply a VLE to their teaching. It involved classifying concerns interviewees said they had when working out how, when and where to use a VLE most effectively and any needs this generated.

The pedagogic issues identified by interviewees were classified in three ways:

- identifying purposeful use (this was dependent on their understanding what a VLE could do and how this fitted with their intended teaching strategy, as well as the suitability of use in a particular context);
- coping with new ways of working (VLE use created different expectations on the part of students and the wider academic community, because the teaching strategy and materials used were more visible and the speed of change and response could be quicker);
- changing how they taught (VLE use caused interviewees to reflect on what they did as they planned use, for some this meant the rejection of parts of a VLE as it could not match what they wanted to achieve, for others it supported a change in teaching strategy either intentional or as a consequence).

#### **6.4.1 Purposeful use**

The first pedagogic issue that interviewees said they had to deal with was trying to identify the way in which a VLE could be used most effectively. They wanted to know: what it could do, why they should use it, how it could help them do their job and how it could help their students learn:

“... I'd go away and sort of have deep thought about what can I do for my students and what are their needs. [... “the person who taught me”] kept saying what do you want to do? And I said, what can I do?” (E1)



“I think we need to be looking at what ... you want to get out of it ... not being led by the technology necessarily. But trying to marry that up with what you’re doing. Because there may be some things you can do but they might not be relevant at all.” (L2)

Interviewees described two modes of VLE use in support of face-to-face education: use during contact time as a vehicle for activities or use to facilitate or extend learning outside contact time. Only a few interviewees (B4, F2, L1, M1 and M3) used a VLE during contact time. The others were inhibited by a lack of access (either because there were not enough computers available or because of technical unreliability) or use did not fit with their teaching strategy:

“... classrooms are about interaction. So [the VLE] and anything else on a screen is for outside class.” (B5)

“... the problem is, the computers are really interesting and ... it breaks up the group’s dynamic if everyone’s got their own personal computer.” (G4)

This was partly linked to a desire to retain face-to-face contact and a fear that VLE use meant a move towards education at a distance. Only at University E had interviewees been instructed to replace some face-to-face teaching with online learning (E1 and E2).

Mandates issued by institutions, regarding the way in which a VLE should be used were generally thought to be unhelpful. These often included instructions to begin use with a particular level of student and although interviewees did not agree on the most appropriate

students to begin with they wanted leeway to decide best use for themselves<sup>48</sup>. Other institutions had explored the idea of templates and specifications about what should be placed within a VLE, for example, course documentation such as module guides and reading lists. N2 wondered how successful standardisation would be when a VLE "... is being used by different people for different things." While there was some antipathy towards it as a way of forcing VLE adoption, not least because it did not seem to have worked so far (B4) and was viewed as stifling creativity (F5) and diversity of approach (M3).

VLE use was still exploratory and evolving: "... I'm going to make them do shorter reviews anyway in future. So it's been a learning experience of what will work better." (M4) Use was affected by the practical problems identified in earlier sections of this chapter: access (B4), reliability (M1), student feedback (E1) and an interviewee's understanding of what was possible, practical and suitable in the time available (B4 and M2).

Interviewees considered a VLE was "... a very interesting tool ... a very valuable one..." (L2) and "...a very good way of teaching some things." (G3), but cautioned against being swept away by evangelists who believed that a VLE could solve all their problems "... because it can do the marking for you. Or ... it will give us time off teaching, that

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<sup>48</sup> Some questioned the wisdom of starting with first year students because they may not have the necessary technical skills (B6). In the case of discussion lists students may not be confident enough about subject matter to participate, it was thought that they needed to be inducted into the ways of the discipline first and obtain some background knowledge (N3). Others thought that there was less resistance to VLE use if students began during their first year (M3).



everything'll be automated and we won't have any of the problems that we've got now."

(J2)

Some interviewees began by making all the tools within the VLE available while others selected certain tools for a specific use, for example, discussion forums to support group work (B5, E2) and multiple choice questions (quizzes) to review and reflect on lecture topics (N1). L1 said that "... the more I've taught with it, the more I lock out." The most obvious, straightforward and popular use of a VLE was to display materials, provide links to other resources and act as an 'electronic filing cabinet': "I saw it as a way of providing resources and information." (G1) Although even this use was deemed unsuitable in some cases:

"We see our students all the time. ... what I always think is if you're using technology you want to use it for things you can't do in any other way. Otherwise there's no point really. And if I can give them a piece of paper then apart from saving on the photocopying, why put it on Blackboard?" (L2)

For those interviewees who already used the Web (such as J3, L2 and N1<sup>49</sup>) or a shared network drive (those at University M and E2) there had "... to be something which you can do with [a VLE] that you want to do that you can't do with ordinary Web pages." (N1) For J3 this meant the built in discussion forum and the assessment tool which would enable him to write "... very simple assessments which could be graded by the system and returned to the student automatically" (although he had had technical problems with both of these tools). Other interviewees (E2, J2, G3 and L2) struggled to see how the

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<sup>49</sup> There were of course those interviewees who were told that all online materials should be placed within a VLE, that stand alone Web pages would no longer be supported, for example those at University G.



assessment tool or ‘quizzes’ could be used. This was usually because they did not match up with the way they wanted students to learn or the way they taught:

“... wondering how the hell computers which I associate with multiple choice questions, ... could be useful for a subject which is discursive, which is wholly about students developing analytical skills. Which is much less about right answers or facts than it is about the effective communication of an argument.” (J2)

“... it's very hard to persuade humanities students that multi-choice questions are a good idea, and colleagues for that matter. [...] on the whole I think there was a very strong sense in humanities that quizzes are not a good idea. So no we're not planning to use them.” (G3)

The integrated communication tools<sup>50</sup> were little used on the whole, perhaps because of the desire to keep face-to-face interaction (see L2, above and Section 6.4.3) and misunderstandings about the type of communication supported by a VLE:

“... I think the logistics of trying to get them all to sit down at the same time to use discussion tools would be just horrendous, it would be just another level of complication to use.” (E1).

Other interviewees reported they had found the use of communication tools (other than e-mail) to be impractical or were uncertain about use (G1 and L1):

“Nobody has ever asked me about discussion fora for example, ... that kind of new approach to teaching isn't high on everybody's agenda. I think it probably is in certain parts of universities. But it's not where I'm located.” (G1)

If students did not use a particular tool or used it differently to the way intended by an interviewee it forced interviewees to rethink suitability:

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<sup>50</sup> Synchronous (chat) and asynchronous (e-mail and discussion forums).

“... WebCT has chat rooms. And actually they've been sparsely used, which is another reason why I'm rethinking whether I'm going to use it next time. Not that the technology isn't there, but if students aren't using it you begin to wonder what the point is.” (M3)

Interviewees pointed out that use “... has to be focused and it has to be structured and it's got to be seen to have purpose by the students.” (M1, M2 , M3 and L1):

“I suppose I could make students use the Web. But you then have to, as they would, ask why are you making us use the Web? What is it about this course which requires us? What is it about understanding how we understand sex and sexuality that requires me to use a chat room? And it's a good question.” (M3)

This caused added pressure on interviewees and for some of them the adoption of a new way of working.

#### **6.4.2 New way of working**

Once interviewees had begun to use a VLE they found that it imposed an extra burden on them. They felt under greater pressure when preparing materials that were going to be on display. This meant learning a new way of writing (E2), rethinking the structure of materials before they were placed within a VLE (B6) and making students feel that a VLE was useful and used (H1). Being forced to think through structure was sometimes blamed on the lack of usability of a VLE:

“... I would love to get the message through to WebCT themselves about quite how difficult their system is to use. No I think it works but I think - ... you have to think about the structure about the whole thing, in together. ... thought before anyone puts finger to keyboard is actually important.” (N1)

Working with online materials and wanting to provide quality products forced interviewees to prepare well in advance (G1) and, in one university, to submit to greater levels of quality



control (J2). There was concern about the amount of time it took to prepare and maintain materials as well as to administer online courses (G1, B6, M3 and F2):

“... I suppose, to set up anything which is a seriously resource based Web site takes a phenomenal amount of time [...] discussion sites do take up a surprising amount of time.” (F2)

Although it seemed that time was a function of the way in which a VLE was used:

“... if you want to put stuff up which is Word documents and PowerPoint files and that's all I was doing ... the first time round. I had it up and running in half an hour, literally.” (G2)

Moreover some interviewees said they found it difficult to know when they had done enough (G3). There was a temptation to offer too much material and too many tasks: “The feedback from the first year was there was too much, they didn't have time to do it all.” (E2)

Interviewees thought that those encouraging VLE use had little idea of the work involved:

“... I don't think the University, certainly I didn't realise the constant updating time required.” (J1)

Of course the hope was that once materials were placed with a VLE the workload would lessen (B5 and B6):

“... I do feel that I have invested a lot. It took up more time than ... that course normally would have done. [...] to be honest ... if you put that amount of work into something then you need ... to run for a couple of years before thinking about changing the topic.” (B5)

However, for those interviewees who regularly updated or who were forced to change course content frequently this was an added pressure (M3). There was only one example (J3) of team planning for the use of a VLE, even where a VLE was used on a team taught module (F4); the norm was one lecturer planning and implementing use. Some interviewees found the preparation of online materials released them from the time



pressures associated with preparing hard copy (F4) while it was an additional task for those who were still obliged to prepare hard copy (E1).

E2 thought that forcing students to work with materials online meant that she was unable to be as responsive or flexible as in a face-to-face classroom (E2):

“... in the talk situation. You can rethink it and do it much more quickly.” (E2)

Although re-organising contact time had led to a different sort of interaction with her students:

“So in fact they get more support and more tutorial time than they would doing the face-to-face class because I've been teaching, ... last year there were some people who came all year to use the lab at that time. And I went to the lab and I was using the time to check through the next module to make sure it was up to date, so I was working on materials as well. That was quite nice because I was, they didn't leave me out as a tutor. And I was included in some discussions I would never have been included in before. I think the ‘guide on the side’ idea happened last year ...” (E2)

Interviewees at University E were instructed to reduce their contact time through VLE use (E1 and E2). Indeed it was thought that this was only fair compensation for the extra planning time needed (E1 and E3):

“... it doesn't save you time. You just use your time differently. [...] the weeks when I'm not seeing students face-to-face in seminars, I still keep those hours ring fenced for those students if they want to come and see me. Or if I call them in because I feel there's some problem with their progress.” (E1)

Others had considered doing this: “... for it to begin to take less time, I'd begin to say I'm not going to lecture you, I'm just going to put a text on the Web.” (M3) “Next year ... some of the online discussion will replace face-to-face time.” (N3) Although as L1 said:

“... at the back of my mind about all of this stuff is that as I said, you can go into a lecture room in two hours and deliver this information. So if you're spending too long on the technical side you're wasting your time. ....

Academics have this constant balancing act ...” (L1)

Interviewees said that increased expectations led to students requiring lecturers to be always available (H1), to make sure resources were available immediately (M3) and generally to provide a constant supply of authored materials (E3) and information. This was thought to be unrealistic. It also contradicted one of the expected benefits of VLE use, to make students take more responsibility for their own learning, and it highlighted the need to set boundaries and to create guidelines for response time.

Another area of concern was the effect that the extra burden imposed by VLE use may have on other areas of their job. Both N3 and L2 were worried about the impact on their research: “I'm ... acutely conscious that every hour I spend doing this is an hour less I spend doing my research.” (N3) They were not alone in believing that work with a VLE was not valued (L1) or that teaching was valued less than research:

“I think the conflict still remains between research and teaching. And they have now got a lot of people working on how to make the teaching environment more friendly, more conducive and so on and so forth. But at the same time they tend to if you like emphasise the research a bit. So there is very little support and encouragement given if you are doing, if you are doing innovations in teaching.” (N2)

It could be argued that the two areas could be combined to satisfy requirements, but this may not be compatible with lecturer research interests: “I mean that would be a really interesting thing for someone to do. It's not what I want to do personally, at the moment.” (L2)

### 6.4.3 Changing how you teach

The previous section described how VLE use appeared to force interviewees to adopt new ways of working, but also encouraged them to adopt elements of good practice and made them think about the way they taught: “I’ve found it an interesting and challenging change. [...] In that it’s made me think about my teaching.” (N3) Therefore the third pedagogic issue that interviewees described dealing with was the way VLE use affected the way they taught and any problems they had found in trying to implement changes or those they had tried to resist.

Interviewees were keen to emphasise that although the use of a VLE may change the teaching strategies adopted, this does not mean that there is no place for face-to-face teaching. Indeed many lecturers stressed that they could only see a VLE as being valuable alongside face-to-face teaching for a number of reasons including student expectation (see comments in Section 6.2.3). According to H1 online discussion works better if participants have met already, while E1 and L1 were concerned about the ability of students to work independently and F1 wanted to be able to check that students were doing what they said they were. E3 felt face-to-face meetings gave her the opportunity to respond more effectively to students: “...I think there’s a need for input of a kind which can be made most effectively, synchronously face-to-face because that way you can check understanding, respond to questions, and so forth.” G3 thought that because “A lot of our students are either making things or writing things. ... social interactions are important ...”.

For other interviewees VLE use meant engaging with (J2) or being able to support different ways of teaching, that is being able to move away from the traditional lecture plus seminar and tutorial model or encouraging the use of active learning (J3, H1, H2, F4, B5):



“The full time courses need rethinking. It's my considered view that we're wasting time doing lectures. I know that it's easier to prepare a lecture but having said that, that's not educationally sound ... we're in a cleft stick, we need more time to prepare lecture notes and use the contact time for seminars rather than stand there and just talk at people, things that could be written down.”

(H1)

“... given that you've got base materials on the Web that they can use and refer to whatever texts they're looking at. You've got a fantastic opportunity, when you see them face-to-face, to engage them at a different level.” (F4)

Although there were problems to overcome, not least the amount of work involved (J2, F4 and H1) and the need to think through how a VLE is applied to teaching (H2 and L1):

“I think people focus on the subject matter and neglect very often pedagogical approaches to teach it. And scaffolding facilities to support learner needs. I think this is then across the university, at all levels ... and in all aspects of learning, not only in e-learning and learning environments. I think this is due to the fact that universities like mine are research led therefore content led, not delivery ... or learning centred ... So it's natural that if they don't do that in the normal activities as lecturers, they also don't do that when they think about learning environments. But ... this is only a gut feeling. And not something I have done research on and I can state as such. ... But I am absolutely sure that when people ... set up courses, they think about what they're going to teach and not how they're going to teach it.” (H2)

N3 was inhibited in making a change to the traditional mode of teaching by student attitudes and by custom and practice in her university :“... I feel rather trapped by the traditional lecture, seminar format which is what University N does. And I'm stuck with that.” (N3)

There was a need to find a way to help students cope with these changes (F2 and L1), particularly foreign students who expected lectures (H2) and a need to be flexible to the needs of the students; different types of students need different levels of support (J1 and N3):

“... what I learnt was that particularly with first years you need to be much more structured. I think it's different with say Masters students, they're much more likely to say, 'oh I don't understand that,' in a lecture, 'could you just explain this?' Or 'I saw this interesting case', or 'I thought I'd like to share this with the group'. I don't think eighteen year olds can do that. They are still at the stage of their learning where they have to be told, here is something to read and please do X, Y, and Z and do it by this date. So that's what I'm going to do much more of next year.” (N3)

Interviewees stated that VLE use had forced them to rethink what they did in a face-to-face setting and the type of materials that they made available (E3 and J2):

“It made me, in constructing the programme, because I've cut down on face-to-face sessions, it makes me think very carefully about what's useful to do ... in that environment, such as looking at video data and discussing it.” (E3)

The focus of any policy regarding VLE use affected the way it was used. At University E this meant that those interviewees (E1 and E2) who won 'online teaching fellowships' had to convert a unit. This initially led them to trying to replicate what happened face-to-face:

“... I think because I was given the brief of converting a unit into online learning, I spent a lot of time trying to recreate seminar sessions which had worked quite well with previous practice. I think that led me to think that what's the point? ... because they're campus based students, why not have those sessions that worked quite well face-to-face and use online learning for something different where you're evaluating web sites?” (E2)

VLE use forced interviewees to learn new pedagogic skills:

“I think actually being a sort of, as it's called, a moderator here, is a highly skilled task which I am you know just getting familiar with. I've done it for two years, it's been a pretty steep learning curve for me and I think I now know how to handle that rather more effectively, well you know, you learn don't you.” (M1)

This additional skill inhibited some:

“... you have to respond to students if they start asking you questions. [...] If I had the support of a kind of a gofer who would act, filter out some ... of questions which have been answered in the course. And then send on to me questions that have not been covered on the course. To build up a kind of frequently asked questions list and for me to respond. That would be useful. I'm very frightened of having to go through all these e-mails myself and having to respond to various queries.” (N2)

## ***6.5 Institutional issues***

This chapter has already identified a number of issues that are best dealt with at institutional or departmental level. These included a need for easily accessed ICT training and technical support for lecturers (and students) together with advice regarding the effective use of a VLE to support face-to-face teaching and learning. Interviewees had concerns about the effect of VLE use on their workload and were worried about management intentions in promoting VLE use. Furthermore they suggested that for them to overcome some of the problems they had to deal with (like student attitudes, skill levels and changing the way they taught) VLE use had to become the norm. This could only happen if colleagues were willing and able to contribute, if the use of ICT was accepted as a possible teaching tool and the institutional culture supported teaching innovation. Access problems could be resolved by investing in better infrastructure and equipment and improving systems such as the registration process. There were therefore two types of ‘needs and concerns’ classified within this category:

- managerial support (interviewees had concerns about the willingness of management to acknowledge and support the real costs of VLE use and suggested that they needed to plan for the effect of VLE use on lecturer workload)



- culture and ethos (interviewees had concerns about the ability and willingness of colleagues to use a VLE and felt that they would benefit from a more inclusive and supportive community of use).

### **6.5.1 Managerial support**

Although universities were reluctant to impose VLE use on their lecturers they had devised a number of incentives and strategies to encourage use (see Chapter 5). It was noticeable that about a third of those interviewed had received extra help to develop VLE use (as distinct from taking part in training courses or receiving one-to-one planning support).

This help had been provided both internally and externally and included monies to pay for better equipment (J1) or time off for the planning of VLE supported courses as well as technical help (E1, E2, F1, F4, J3, M1 and N1). Three interviewees had been involved with external projects that funded teaching innovation with a focus on ICT use (L1, M1 and J2), two had received external monies to cover the cost of development (F2 and J2) and a further two (G3 and G4) won some funding to develop students as independent learners for which they intended to use Blackboard.

This extra help was an important catalyst in the development of VLE use among lecturers who already had an interest in developing their teaching and the use of ICT, although “... even then the time out from teaching was nothing like the amount of hours that I actually put in ... to develop this.” (M1) Moreover, it did not explain how other less motivated colleagues were to be engaged. The type of help received suggested issues that institutions

needed to address in order to facilitate VLE use, issues such as time to prepare<sup>51</sup> (B4, F2 and J1), the provision of support staff to help design and input content (F2 and F4) and monies to cover development costs (F2 and J2).

Interviewees complained that management had not considered and did not have a realistic understanding of the impact of VLE use on working practices (J1 and B4) because:

“It's a whole different methodology and I don't think management has got the faintest idea how to cope with it. ... And their conventional kind of ways of controlling staff and as giving staff teaching and assessing band level will all change dramatically. And it won't be cost saving which is what people are going to hate.” (B4)<sup>52</sup>

“... I'm now faced with the possible, a serious repetitive strain injury and I'm very upset about that. And we were given vague advice about using computers but in hindsight, well - is it an accident that of all the historians I use computers by far the most and I'm the one who's in trouble. I'm quite bitter about that. [...] I believe legally I've been told that I should have, we should have our working practices assessed and not just our work stations and I don't think that's happened. Nobody's assessed my working practice.” (J1)

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<sup>51</sup> The time and effort needed to create, maintain and revise an online element for their course was a big issue for interviewees and considered a burden: “... what has prevented me from using VLE-J to its full capacities and that's largely time to be honest.” (J2) B4 thought it was important to dispel the myth that VLE use would lead to a “cost saving”: “You know this isn't cost neutral, as the jargon goes now. This, at the very least is marginal increase and sometimes at the front end, a first go, is, you know, doubling, tripling, quadrupling costs.” (B4)

<sup>52</sup> B4 was the interviewee who had the most experience dealing with institutional issues, having begun using the University VLE from the first development days and having sat on user committees. He saw it as his role to agitate on behalf of fellow users, to point out to ‘the powers that be’ when they might have unrealistic expectations. He argued that they had to recognise the amount of effort and support needed: “There's a problem throughout the university sector about take up, of course, and I think it comes out of the failure to recognise the front-end investment.”



Although only one interviewee raised this health and safety aspect of use it is nevertheless an important issue for institutions to bear in mind.

The existence of an institutional strategy was considered important (J3) although as has been explained above this did not mean interviewees wanted standardisation – see page 235. There was criticism from within institutions where interviewees felt that VLE use lacked direction or adequate support F1, H1, L2 and B4):

“This is a university whose executive is very keen on the idea of virtual learning environments, but doesn't spend that much time telling the academic staff how we're actually supposed to go about achieving them. ... working out exactly how we are supposed to put into action what the university would like us to do.” (F1)

“... if they want ... the use of a VLE to be widespread then they are going to have to have more structured training to allow people who are perhaps not pioneers and enthusiasts to be able to get to grips with it.” (H1)

Problems were caused when it was not clear where to get help, which department (IT services or educational development) was responsible for what and if the level of help or support was not responsive enough (see page 227). The experience of interviewees at University F was particularly illustrative of the effect of a lack of support. They felt let down by the removal of a central department supporting their use of the VLE stating that this had seriously impeded progress. They had all used the staff within this department to help plan, design and implement online learning, something identified by interviewees at other institutions as being important and necessary (see page 231 – Universities M, N). It was seen as “... obviously a cost cutting exercise.” (F4) And fuelled fears interviewees had about institutional intentions: “... you don't want to create an impression more from your own sort of job security point of view, that they can learn it from WebCT directly.”



(F5) This last was something raised by other interviewees and linked by them to an argument for keeping face-to-face contact<sup>53</sup> (F2, G3 and E1):

“... there is a tendency from management to see e-learning as a perhaps a cheap way of getting bums on seats and a way of reducing staff times and stuff. And I don't think it works. ... I don't think you can do without face-to-face contact at some point.” (F2)

Management willingness to provide adequate resources was another issue. J1 explained that being able to demonstrate the module helped student comfort level. F1 found use of a VLE went up after a familiarisation session, but this was dependent upon gaining access to the lecture room equipped with the “large video projection screen” (J1) and having access to specially equipped computer labs (F1), something that was not always possible (see page 227). In institutions where there were difficulties<sup>54</sup> accessing equipment such as computers and data projectors to use PowerPoint, let alone a networked computer, their ability to demonstrate VLE use and to support student use adequately, or even move away from the idea that a VLE is something separate to what happens in the classroom rather than an embedded support tool that enhances the teaching and learning, was questionable. There was also evidence that some early adopters were subsidising development out of

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<sup>53</sup> This point illustrates the influence of one aspect of context on teaching approach and could have implications for the strategy adopted.

<sup>54</sup> Problems booking a scarce resource (lap top, data projector, suitably equipped lecture room – B4, B5, G1, G4, H1, J1, K2, L1) or caused by having to transport equipment around split sites (J1, J2) and stolen data projectors (F2, G2, J1): “... I would have to book specially.” (B5), “... British universities are still a bit backwards when it comes to equipping the lecture theatres.” (F5), “There are only two rooms on this site that have access to PowerPoint.” (G1), “... we don't have PowerPoint projectors in any of the lecture rooms.” (K2)

their own pocket: B4 who paid for broadband access at home and J2 who bought Web authoring software.

Interviewees claimed to spend a great deal of time dealing with registration problems which were said to have a number of causes: layers of bureaucracy arising from a centralised registration system that inhibited the ability to edit, amend or update registrations (University F) and a lack of adequate administrative support where departments or lecturers were expected to input registration details themselves (J2).

Interviewees at University F had particular problems understanding who was in charge (F1 and F5) and were frustrated by their inability to deal with registration problems themselves.

A contrasting point of view came from interviewees at University G where there had been support for a more centralised system because lecturers had objected to having to input all the data (G3). This indicated a need to find a compromise between centralisation and lecturer control over registration. L1 said that his university had gone through similar problems but that “a pretty rapid fix system” was put in place which gave students an element of control: “... they can register themselves, if they have trouble they can get in touch with someone quite quickly.” This solution was in line with a desire to encourage students to take more responsibility for their own learning.

Password access provided security but impacted on

“... that kind of community of sharing knowledge and sharing scholarship that [was possible when using Web pages] ... I liked the fact that it was the kind of world wide community and anyone could drop in and stuff. You somehow felt less guilty about sending people off to ... other institutions teaching Web pages when you knew that people could come and see yours.” (G4)



It made access for visitors, as well as collaboration and communication across institutions difficult and was criticised by some interviewees (J1 and H2). Access within the institution was also affected, although the need for a certain amount of privacy was understood by some interviewees:

“... it's been really useful to see what other people have done. And that's only happened to a limited extent. I've seen more of what people have done through doing the training courses. But there are issues involved there because ... some of the students were sharing their personal views ... it's creating a virtual community and you don't necessarily want lots of other people looking at what they've done.” (E2)

### **6.5.2 Culture and ethos**

The culture and ethos of an institution, School or department, with regard to technology use and teaching innovation affected what interviewees felt able to do. While interviewees said that they learnt a lot from colleagues, valuing any opportunities to share good practice and pick up ideas, they were also irritated by those who were reluctant to use a VLE or electronic resources and who dismissed those using a VLE as ‘technophiles’<sup>55</sup>. This could leave them feeling isolated and impacted on student use (J1).

The possibility and opportunity of sharing and learning from colleague experience was important in encouraging VLE use. Colleague use was identified as a major reason for VLE uptake as well as something that was needed to encourage more student use (E3 and N2). In some contexts informal networks already in place worked to support use (B5, G3,

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<sup>55</sup> Taken to mean an uncritical supporter of technology use: “... I'm not interested in the technical side of it and therefore I'm only interested in learning ... what I can do with it. Having thrown myself into it, I realise a lot of other possibilities and I would like other members of staff to know about those possibilities. But in a sense anyone, you're almost tarred with a brush of technophile, once you get involved ...” (B5)



H1, M4) while in others more formal events were arranged (M3, E2). In others cases it had been a by-product of initiatives taken to encourage use (E1).

Interviewees said it was easier for them to make use of a VLE and electronic resources if students met them elsewhere, so it was considered the norm (J3 and L1). F1 said that the big issues for her were:

“... the difficulty ... with dissemination of good practice on one level but also dissemination of what is actually expected of academic staff with regard to using electronic sources. And how we actually go about equipping ourselves to be able to use and that's the other big issue.” (F1)

Therefore there was a need to promote a culture of use and the sharing of ideas and problems encountered, so VLE use can become self-supporting through a community of practice (E3, H2, J2 and N2). Interviewees found events arranged to share good practice important as a way of examining the benefits of VLE use (M1 and N3).

The prevalent culture in some universities made innovation and the sharing of good practice very difficult. For example research universities did not always give credit for teaching innovation (N2 and N3) and interviewees thought colleagues might be reluctant to open their teaching up to examination (E2) or to change their practice (G1). Where there was no central body co-ordinating VLE use, sharing strategies was problematic (F4).

Interviewees thought that one of the reasons colleagues did not use a VLE was because they did not have the requisite IT skills (B4 and H1) or confidence. Moreover, that some were fearful of admitting they did not know how to do something (E3), especially if they had a reputation to keep up (H1). Although attempts to improve the skills and practice of new lecturers had been put in place (G4 and J2), there was concern that lecturers later in their careers seemed to have been forgotten and that this would have an impact on use

(L2). It was recognised that some people may feel technology use was not relevant to them (L2). However, they felt let down and used it if colleagues were quite willing to use them as support people rather than learning how to do something themselves (B5, J2, L2 and N3) or if colleagues did not take up the opportunities offered (F3 and M4).

Interviewees thought some institutional cultures did not help this aspect, as work with ICT was not valued (L1 and L2); it therefore had the potential to become an extra burden for those who took it on board.

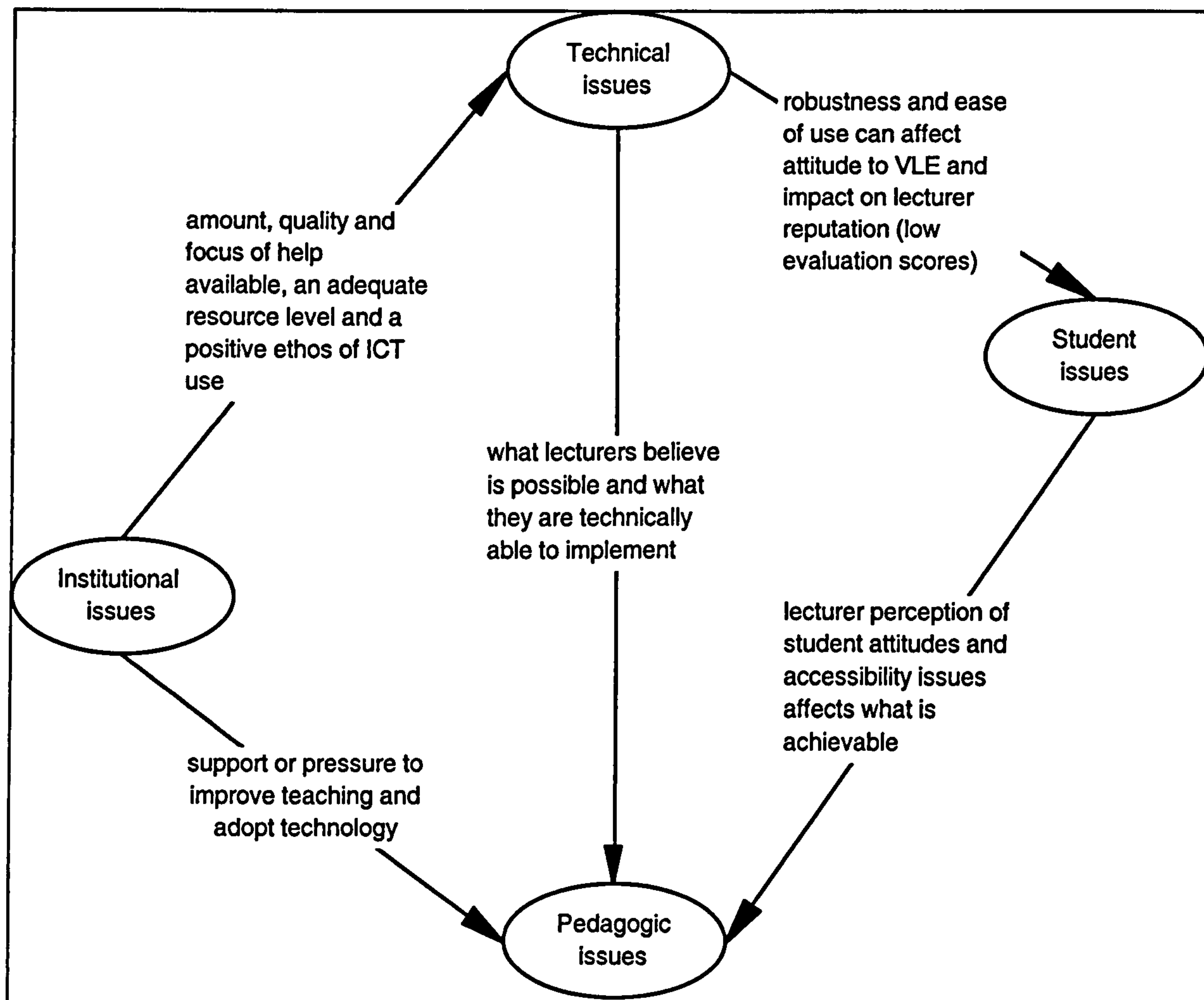
Innovators were influential in promoting VLE use, for example E3 began to use a VLE following colleague use. Although this could be problematic if the impression given was negative:

“I've had sort of general discussions with people about sort of the time it takes to put things on. That's certainly been something that staff have been interested in. [They are ...] very concerned ... because people saw me during the fellowship and knew that sometimes I had some very bad days when I just felt completely overwhelmed by it. So I think they're aware that it's not a simple answer to problems.” (E1)

“A few colleagues have spoken to me yes and one of the things I say is that doing what I did is a huge amount of work. And this hasn't particularly encouraged other people to do it.” (N1)

## ***6.6 Conclusion and discussion***

Data presented in this chapter described factors that interviewees said supported or hindered their use of a VLE. There were four main inter-related issues, expressed as four categories: student, technical, pedagogic and institutional issues. The relationships between the categories are shown in Figure 6.2.



**Figure 6.2: The relationship between 'needs and concerns' categories**

A common theme that cut across a number of categories and that was referred to in contradictory ways was time and effort. Firstly it was a benefit of use and secondly it was a burden. Interviewees said that VLE use saved time because they did not have to spend time photocopying and students could access missed or lost handouts from the VLE without bothering them. However they also complained that they did not have enough time to become familiar with the VLE, so they can work out how or whether to use all the functionality, nor enough time to update or redo materials.

Most of the interviewees believed that VLE use added to their workload because the structure of the material had to be thought through and it made teaching more visible. A



number insisted that it took longer to prepare when using a VLE. There was some acknowledgement that the amount of time this takes would decrease over time as courses are repeated and materials reused, but updating did take time and they could not afford to have incorrect links and missing information because of the effect this would have on student users. Having well designed materials and providing greater levels of support and guidance for students could be considered as elements of good practice, as G3 stated: “It wasn't necessarily the fact that it was virtual that made it time consuming. It was the fact that to write good learning materials is very time consuming I think.”

When asked “is there anything that would help you make better use of the VLE?” two lecturers (E1, E2) replied “time” and a further two thought that time should be allocated for the “updating and enhancement” (J1) and to “think through how courses are designed and developed” (M3). Interviewees wanted the time it took to set things up to be taken into consideration. In some cases they had changed the pattern of teaching, which in some instances was given a teaching and learning rationale, but was also because they felt that they should be compensated for additional preparation time.

There were those who had integrated ICT tasks into their subject because they felt that VLE use enabled them to compensate for a diminution in the service they were able to offer to students (G1, K2):

“... I do find it very, very stimulating to use these tools and potentially it has always struck me as a means by which in difficult and changing circumstances you can try, you can maintain ... a level of professionalism in the subject. I mean that was my original concern you know. I don't really see modern universities as doing what they should be, in a lot of ways. It's difficult with large groups of students who are not quite the same types of students as one has had in the past. And I think there is a necessity there to deliver material in

nevertheless very professional and high quality ways. So that's my - that's my idea about virtual learning environments.” (G1)

A dissenting voice, with regard to the amount of time it takes to set up an online course, was G2 who claimed he had something up and running in twenty minutes. He attributed this to the usability of Blackboard as opposed to WebCT. His colleagues did not agree with him and he admits he only uses a VLE as a document archive “... of PowerPoint slides, ... the assessment schedule, the teaching schedule, extra sources like book lists, ... the assessment criteria check lists” (G2). Whereas G1 and G4 had created a collection of Web pages containing links for further exploration or activities. This demonstrates the necessity of qualifying interviewees’ assertions.

Interviewees had concerns about the ability and willingness of colleagues to make use of a VLE and of institutions to provide adequate support (mostly in the way of time to prepare, familiarise themselves with the technology and investigate ways in which it can be used). There were concerns about a possible “band wagon effect”, that people would just become involved in use without really questioning why or thinking through how they might effectively use a VLE:

“Whether or not they truly use it well, and/or couldn't do things in other ways, I'm not so sure. Once you've established that you've got an awful lot of PCs here, a link centre here and a Web development team here, what - you have to feed the beast! So of course, more people will get involved ... people very rarely stick their heads out and say, what exactly am I doing riding around this circle?” (M3)

However, because VLE use was patchy across institutions interviewees complained that students forgot how to use it, perhaps demonstrating the need for an overall strategy.

Interviewees described themselves as taking a middle road between the utopian and dystopian views of technology use others held (F2, G3 and J1):

“I think what you find is that you either get people using it who are complete converts and they say it's like the promised land, etc. And then you get the other group which are complete sceptics who think this is threatening to undermine education as we know it.” (F2)

They felt that they should provide the opportunity for students to acquire ICT skills. There were differing opinions about student ICT literacy levels, but an identifiable need for the institution to take on the training and support aspect; interviewees complained about losing subject time.

B4 identified the most institutional issues. This might be expected as he had been involved with the consultations and implementation of VLE-B from the beginning and served as a School support person who would be made aware of any institutional failings by colleagues seeking help. The need for an institutional strategy was highlighted, to provide guidance and adequate levels of support (J3), although this was qualified. G2 said this should be done once technology use was established, so that people could be persuaded of the value of adopting the technology, while M1 pointed out that subject differences meant there could not be a one size fits all approach. He argued that the approach to teaching is the important element in the way a VLE is used:

“... the needs of the individual and the specific needs of the subject and its delivery are really quite different from each other. I mean I don't expect someone in the sciences to teach the same way as I teach history.” (M1)

L2 gave considered thought to the need for a support role, promoting the effective use of a VLE and encouraging the evaluation of its use:

“... I think probably what will happen is that eventually that will become some, part of somebody's job remit. I think it needs to be really, in order to take it forward. You know, to collect this kind of evaluation, to be monitoring how



it's working. To be checking it's updated and making sure it's being used in the best way. ... maybe this is just because I've come in to it late. But you know we've kind of used it as we're going along and probably it's time now to say well where does it work, why doesn't it? [...] I do worry that in the sort of context we have at the moment where things get devolved back to individual members of staff. And that's asking them to do maybe something else again that they feel you know they just, you've got so many things to do.” (L2)

Interviewees said that VLE use could be affected by student attitudes and have an impact on student motivation. They had reservations about management intentions and willingness to adequately support the implementation of different working practices and as early adopters were affected by colleague inertia. Their own ICT experience and comfort level affected what they were able to do as did their understanding of the VLE employed and the level of support and advice available.

What was interesting, but perhaps not surprising, was that despite the different focus of the questions there was a consistency of issues found in the pilot study and the main study. Interviewees were asked to identify general issues of potential concern and most of the comments were forthcoming without prompting. Interviewees were prompted if they did not understand the question or if they identified an issue of interest, but skirted over it, therefore it is possible that an element of bias crept into the interview. On the other hand the interview was set up to provide a guide for a conversation about their experience and understanding that explored a number of set themes.

There was an overwhelming feeling that interviewees were being asked to use something they did not understand fully, could not use fully and were badly prepared for. What is more they had no time to improve matters and lacked the support of a culture of use.

Nevertheless this was not a completely negative picture. They were enthused about trying out new ways of teaching and supporting their students and talked about evolving use.

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## **Chapter 7: Using a VLE to support face-to-face teaching**

This chapter describes and discusses the data used to answer the third research question:

“How do lecturers say they use a VLE to support face-to-face teaching? In doing that it further addresses one of the aims of the research which was to examine one of the claims made for the Web and Internet-based technology, on which VLEs are based: that it facilitates or encourages a student-centred approach to teaching and learning. Chapter 5 showed that some of the reasons interviewees gave for their use of a VLE were to do with facilitating learning and that these could be considered student-centred in that they fitted with elements of the student-centred teaching methods categories created through the pilot study. This chapter uses the Approaches to Teaching Inventory (ATI) and the data collected for the trial and main studies to explore the teaching methods used and the approach to teaching adopted by interviewees in order to understand whether any of the VLE use described could be categorised as student-centred.

Section 7.1 begins by reviewing the way in which the data was collected (described more fully in Chapter 4). Section 7.2 shows the level of VLE use interviewees said they engaged in and the ICT tools or elements of a VLE they claimed to use in the teaching contexts they described. Section 7.3 describes the data collected with the ATI and discusses what this told me about interviewees’ approach to teaching. The ATI was used to select four cases to be explored in more detail in order to further understand the way in which a VLE was used and the teaching methods adopted, section 7.4. Section 7.5 concludes by reviewing how far the main study was able to answer the third research question and outlining what this actually tells us about one of the claims made for VLEs and about the way they are used.

7.1 Exploring and understanding how lecturers use a VLE

This research aimed to understand how interviewees were using a VLE, that is what teaching methods were facilitated by VLE use, whether use had actually changed anything interviewees did, and whether this involved supporting student-centred methods of teaching. Chapter 4 explained how the Approaches to Teaching Inventory (Prosser & Trigwell, 1999; Trigwell & Prosser, 2004) was developed as a way of classifying the approach to teaching taken by a teacher in a particular context. For this reason it was decided to use it to indicate whether interviewees on a particular course or module where a VLE was used adopted a student- or teacher-focused approach and therefore were more or less likely to use student-centred teaching methods. The interview asked them to explain the way they used a VLE in that same context. The questions and prompts used are listed in Table 7.1 (for the trial main study) and Table 7.2 (for the main study).

<p><b>Part 2: Motivation / Deciding to use</b></p> <p>[...]</p> <p>How did you begin using the VLE to support your teaching?</p> <p>Has your teaching been affected by VLE use? /Has your use of the VLE changed anything you do in your teaching?</p> <p><b>Part 4: Tools / elements used</b></p> <p>What elements of the VLE do you use to support your students' learning? (remember to distinguish between e.g. given)</p> <p>Tools: e-mail, forum, notice board, Web authoring for content, etc.</p> <p>[...]</p> <p><b>Part 5: Benefits</b></p> <p>Is there any aspect of the VLE or its use that has been particularly useful?</p> <p>Describe it? (N.B. course level)</p> <p>Can you think of an example when the VLE has been of benefit?</p> <p><b>Part 8: Change</b></p> <p>Is there anything you do with the VLE, that you would want to change for next year?</p>
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Table 7.1: Exploring the use of a VLE - questions and prompts from the trial main study

<p><b>Part 5: One example of VLE use</b></p> <p>Now I would like you to think about the particular context that you were referring to when completing the Inventory:</p> <p>Can you start by telling me about the students who take this module / course?</p> <p>[for example: Is it compulsory or optional? + How many students take it? + What level is it at?]</p> <p>Will you take me through the way in which the VLE is used in this instance?</p> <p>Why did you use the VLE in this way?</p> <p>How did you choose which tools to use from the range available in the VLE?</p> <p>How does all this relate to the course / module assessment?</p> <p>What feedback have you had from your students about this use of the VLE?</p> <p>Has the use of the VLE changed anything that you do in face-to-face sessions? + If so, in what way?</p>
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**Table 7.2: Exploring the use of a VLE - questions and prompts from the main study**

The development of these questions and prompts and way in which the Approaches to Teaching Inventory (ATI) was used are dealt with in Chapter 4. The following section attempts to put the VLE use encountered into some sort of context by describing the amount of VLE use each interviewee claimed, what technology tools or software applications they said they used and relates the described use to taxonomies of online courses and online education.

**7.2 Amount and type of use**

This research was designed to investigate the way a VLE was used to support face-to-face teaching. Those interviewed were, of necessity, either innovators or early adopters (as defined by Zemsky & Massy, 2004). That is, they claimed to have used a VLE for about as long as it had been available within their institution (from up to one year after introduction, for example two out of the three years available). The length of their involvement ranged from half a year (M4) to four years (interviewees at universities H and J). Interviewees’ VLE use covered a variety of courses with different levels of application,



anything from just holding course content (G2) to course content and the use of discussion forums and e-mail to support group work (B5). The table shown in Appendix J summarises the number of courses interviewees said they used a VLE for as well as listing the number of years they claimed to have used a VLE.

The first two parts of this section, 7.2.1 and 7.2.2, explain the sort of use interviewees described and the technology ‘tools’ used. Section 7.2.3 illustrates how a portion of the data, relating to the use of computer-mediated communication (CMC), was used to move from exploring ‘what’ interviewees used to ‘how’ they used it.

### **7.2.1 Describing the type of VLE use**

There are several taxonomies that could be used to classify the VLE use described. One of the earliest is Mason’s “Models of Online Courses”, which was adapted by JISC to describe the sort of use a VLE could be put to, see Table 7.3. As Mason herself concedes “... my categorisations are heavily influenced by a distance teaching background ...” (1998), they are conceptualised on the basis of teachers and learners not meeting face-to-face, but using the technology to support collaborative activities and discussion which in the campus-based institutions investigated here traditionally take place in the seminar room, for example:

“... English has been involved in various pilots that kind of use virtual discussion groups, which on the whole were not a success. ... students regard the seminar rooms as where they do their interactions.” (G3)

<p>A. Content + Support Model: Here web-based materials (typically) provide the content of the course, supplemented by tutorial support. The level of on-line interaction is low and the model is very akin to traditional teaching with the content being delivered via the VLE, rather than by a teacher. This is probably the most common model at present.</p> <p>B. Wrap-around model. Here course materials are accompanied by activities and on-line discussion etc. with a consequent increase in the time spent on-line.</p> <p>C. Integrated model. This is a resource-based model where the course is based on collaborative activities, discussions and joint assignments. The course contents are dynamic and influenced by individual needs and group activities, with resources being contributed by students or tutors as the course develops.</p>
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**Table 7.3: Mason’s Models of Online Courses (1998) adapted by JISC (2002b)**

Despite what JISC maintained (that model A, where content was delivered via the VLE rather than by a teacher, was “... probably the most common model at present.”) interviewees said that course content was still more usually delivered through lectures and followed up in seminars. Those who had replaced some lectures and seminars with activities supported by VLE use (for example B4, F2 and L1) tended to do so by providing a lecturer supported workshop or computer lab time.

The “content” interviewees provided through a VLE was a mixture of HTML pages and documents uploaded in .pdf (Adobe Acrobat) or MSWord format including items such as module guides, course outlines, assignment guidelines, links to useful resources and lecture handouts. Each interviewee’s use was based on what they thought would be most useful for their students and fitted with the intention behind their use (as explored in Chapter 5). So someone like B5 had included “... no content in a sense because it’s up to the students to research a real case ... I don’t provide them with content. I provide them with the structure ...”. G3 on the other hand described his use as a “... gateway to materials ...”.

The use of a VLE to hold “content” was often the first way in to use: “... right back in the early days my first thought and many people's thought, ... was to take all the material you



normally use and bung it on to VLE-B.” (B4) The rationale was that it would support students who missed lectures and seminars and avoid the problems associated with the inevitable misplaced course documents:

“... I don’t give any handouts at all. No module book, nothing. There is a reason for that actually, I find that ... whenever you first have contact with these students they are hit with so much information they just, they forget where it is.” (F4)

“... as a first year student, if you're BA English Studies you're given an orange A4 booklet at the start which contains the unit description ... Which they invariably lose, or don't realise the significance of, so it's nice to have another copy of it at hand.” (G4)

This was then more of a “belt and braces” approach and meant that a VLE was used as a student support tool rather than as a means of delivering course content. Although some interviewees recognised that this type of use affected student perceptions and willingness to become involved with VLE use:

“... of course it's passive content and it doesn't actually work. And the students really aren't interested. To try and get them going you'd have to find more things that are going to engage them.” (B4)

The VLE use interviewees described seemed to fit more readily into two further taxonomies of online education. Harasim (2000) focuses on the mode of delivery, Table 7.4, while Bell et al. (2002) define use in terms of access to resources, interaction and communication, Table 7.5.



<p>Three modes of delivery distinguish online education:</p> <ul style="list-style-type: none"> <li>• Adjunct mode uses networking to enhance traditional face-to-face or distance education.</li> <li>• Mixed mode employs networking as significant portion of a traditional classroom or distance course.</li> <li>• Totally online mode relies on networking as the primary teaching medium for an entire course or program.</li> </ul>
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**Table 7.4: Online education, modes of delivery (Harasim, 2000, p. 46)**

<p><b>Mode A - Web Supplemented</b></p> <p>(participation online is optional for the student)</p> <p>Enrolled students can access information on units of study that is additional to that available in the university's calendar or handbook. The information may include course descriptions and study guides, examination information, assessment overview, reading lists and other online learning resources. The information is used to supplement traditional forms of delivery.</p> <p><b>Mode B - Web Dependent</b></p> <p>(participation online for each activity described in (i), (ii) or (iii) below is a compulsory requirement of participation although some face-to-face component is retained)</p> <ul style="list-style-type: none"> <li>i. Students must use the web to interact with the education content necessary for study</li> <li>ii. students must use the web to communicate with staff and / or other students</li> <li>iii. students must use the web both to interact with content and to communicate with staff and / or other activities</li> </ul> <p><b>Mode C - Fully Online</b></p> <p>(there is no face-to-face component)</p> <p>All interactions with staff and students, education content, learning activities, assessment and support services are integrated and delivered on line.</p>
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**Table 7.5: Online course definitions (Bell et al., 2002)**

In terms of these two classifications the majority of VLE use described could be classified as “adjunct mode” and “Web supplemented”, with aspirations to be “Web dependent” where interviewees used a VLE specifically because of the possibility of student interaction with the educational content (for example N1’s use of quizzes) and with their peers (for example B5’s desire to facilitate group work across a split-site university).

Although these elements were often optional because of interviewee worries about access (something mentioned in Chapter 6):

“... if more people use their own personal computers from home for instance then it would work better I would guess. But I don't think they're quite geared up for that yet.” (B6).

### **7.2.2 Describing what technology ‘tools’ were used**

Table 7.6 and Table 7.7 show the variety of VLE tools<sup>56</sup> and other software applications or pieces of technology interviewees said they used. This table does not show a conclusive list of all the ICT tools used by interviewees, as the interview concentrated on investigating one context of use, so the tools recorded represent those spoken about in that context. For example, it appears as if not all interviewees use e-mail although it was clear from the way contact was made (see Chapter 4) and some of the other comments made by interviewees that e-mail was an important management and support tool that everyone used. Moreover data presented in this way only shows what was used rather than how it was used so does not really help to answer the research question.

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<sup>56</sup> Laurillard lists the key features of a VLE (2002, pp. 209-12) and documentation describing the sorts of tools available within VLEs is available from the Web sites of the WebCT and Blackboard companies, for example [www.webct.com/services/ViewContent?contentID=4441596](http://www.webct.com/services/ViewContent?contentID=4441596) and

<http://www.blackboard.com/worldwide/gb/en/ls.htm>



VLE	VLE-B			Web-CT																	Lrng Spce		VLE ~J	Blackboard							
Interviewee	B 4	B 5	B 6	E 1	E 2	E 3	F 1	F 2	F 3	F 4	F 5	H 1	H 2	M 1	M 2	M 3	M 4	N 1	N 2	N 3	J1	J3	J2	G 1	G 2	G 3	G 4	K 1	K 2	L1	L2
Tool																															
Personal information manager/ notice board / virtual café	X		X									X																			
Calendar					X	X						X															X				
Content (including glossary, URLs / links, lecture notes, reading lists)	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Document annotation / note taking					X					X													X								
Discussions / bulletin board	X	X			X	X	X	X	X	X		X	X	X	A	X	X	X		X	X	P			In.		A		X		A
Document posting / group folders	X	X	X				X		X	X			X	X							X	X	X		X			X			
Mail	X	X			X	X		X	X					X		X		X										X	X		X
Quizzes / MCQs	X		X	X		X	X	X		X								X		X		P			In.			In.		X	
Tracking	X			X	X			X		X			X					X	X		X									X	X
Chat					X							X	X			X															
Use of VLE to return assessment marks – online grade book										X	X																				
Student feedback survey																														X	
Assignment submission					X	X																									

KEY: X = Actual use described; P = found use problematic; A = attempted use; In. = intended or future use rather than actual use

Table 7.6: Elements of a VLE interviewees said they used

Interviewee	B 4	B 5	B 6	E 1	E 2	E 3	F 1	F 2	F 3	F 4	F 5	H 1	H 2	M 1	M 2	M 3	M 4	N 1	N 2	N 3	J1	J3	J2	G 1	G 2	G 3	G 4	K 1	K 2	L 1	L 2
ICT external to VLE																															
External Web site / Intranet			X		X										X	X		X	X			X		X		X				X	X
Shared network drive														X	X	X	X														
PowerPoint			X		X							X	X	X		X	X	X	X	X				X	X	X	X				
Web authoring software														X		X					X	X	X	X	X		X			X	
University or private e-mail	X			X	X	X			X			X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X
CD-ROM												X		X																	
Subject specific software	X										X	X						X											X	X	

B4 = SPSS, H2 = CASE tools, MSProject, L1 & N1 = spreadsheet

Table 7.7: Additional technology tools used

Nonetheless, one of the aspects of VLE use I had been interested in exploring was whether interviewees had found a use for the integrated CMC tools (such as the discussion forum) that distinguished a VLE from stand-alone Web pages. Recording the technology tools used in this way enabled me to see who claimed to make use of the integrated CMC, although it did not tell me how they used the CMC. An examination of the transcripts



provided more comprehensive information about the way in which these tools were used and the reasons for non-use. This fitted better with my original intention, to examine “how” interviewees used technology and whether any of that use supported student-centred methods rather than “what” technology interviewees used. The data extracted is examined below.

### **7.2.3 Exploring the use of computer-mediated communication**

Interviewee comments from the trial and main study transcripts that described CMC use were examined. I had expected that the use of integrated communication tools such as a discussion forum or bulletin board might be a main reason for the use of a VLE in the discursive subject areas of Social Sciences and the Humanities. Use of the integrated communication tools appeared to be the main benefit to accrue from using a VLE, otherwise there seemed to be little difference between VLE use and using a series of Web pages to support student learning. Something commented on by interviewees J2, J3 and M3, for example. J2 said that as he did not use the discussion forum: “... there are benefits of using VLE-J but again ..., some of these benefits I think I could translate to using simply Web pages.” (J2)

There were two main reasons for non-use: not seeing the need for online discussion when it was possible to have face-to-face contact (E2 and G3), something interviewees thought deterred student use also (H2), and feeling overwhelmed by the practicalities of managing discussions with large student numbers (J3 and N2). Nevertheless interviewees said they were exploring the use of discussion lists and forums to support and encourage discussion and collaboration (E3, F1, F2, F3, F4, H2, J1 and J3) and “... facilitate the creation of a sense of community.” (E2) These are elements of the student-centred teaching methods categories created from the pilot study data and indicate a student-centred intention

(something that was also clear from data described in Chapter 5). However, while interviewee intentions may have had a student-centred orientation what they described as actually happening was only so at a very elementary level.

A VLE allowed lecturers to provide guidance and feedback, but seemed to support little collaboration and actual discussion. Three of the lecturers (F3, J1 and N1) said they used the discussion forum as a tool to provide answers to questions that may be relevant to other members of a course. F4 wanted students to use the discussion forum to share information, but found that most treated it as an "... open e-mail ..." to send messages to tutors about missed sessions. F1 set up a discussion board for students to post questions and raise issues that they had seen in the media that were relevant to the course but not actually part of course content. This was in direct response to student requests, but was still not greatly used by them.

The instances that interviewees felt worked best were those that were more highly structured, often with a link to assessment. E3 had suggested that students make use of CMC to mail or post exercise answers, but because this was not assessed not many did, although they sometimes posted a question or an observation and did share their own experiences. H2 asked students to post coursework online so that others could use it as reference for the next stage of the assignment and to use the CMC to support group work. F2 used a discussion forum to encourage student discussion about topics covered in an online seminar. He described setting questions and intervening to prevent and correct misunderstandings and guide the discussion. The online discussion was followed up in a face-to-face session.



Some assessment, however, was of dubious educational value, as acknowledged by one interviewee, even though it seemed to have a positive side effect. B4 described assessing students on the amount of postings to a discussion forum, which he admitted was “... quantitative rather than quality ...” although he pointed out that the quality of discussion or the summaries posted is quite good as “... they know they’re going to be seen by me and all their fellow students ...”.

Chapter 4 explained that I decided to use the Approaches to Teaching Inventory (ATI) in order to further understand “how” interviewees used a VLE. The following section describes and discusses the data collected by this means.

### ***7.3 Using data from the Approaches to Teaching Inventory***

The ATI uses inventory items to score a teacher’s approach to teaching in a particular context (see Chapter 4, p.121). A Likert scale of 1 to 5 is used so the total possible score on each of the two inventory scales is 40. Table 7.8 shows the scores obtained by main study participants on each scale, as well as some of the contextual factors that were extracted from the data collected.



Inter-viewee	Gender	Course Level	Subject	VLE used	Student-focused score /40	Teacher-focused score /40
Post-1992 institutions						
B4	M	2 + 3	Sociology	VLE-B	38	18
B5	M	3	English	VLE-B	36	13
B6	M	3	Religious Studies	VLE-B	35	25
E1	F	3	History	WebCT	31	21
E2	F	2 + 4	Information Science	WebCT	29	20
E3	F	1	Communication Studies	WebCT	29	23
F1	F	1	Politics	WebCT	34	28
F2	M	2 + 3	History	WebCT	33	19
F3	F	3	Business	WebCT	29	23
F4	F	1	Business: Marketing	WebCT	28	19
F5	M	1	Business: Accounting	WebCT	27	23
G1	M	1 + 2	Art History	Blackboard	30	23
G2	M	2	Cultural Studies	Blackboard	40	18
G3	M	2	English	Blackboard	37	11
G4	M	1	English	Blackboard	35	20
J1	M	1	History	Learning Space	25	16
J2	M	1	English	VLE-J	36	20
J3	M	1 to 3	Law	Learning Space	29	24
M1	M	2	History	WebCT	40	26
M2	F	2	Drama	WebCT	36	23
M3	M	1 + 2	Sociology	WebCT	36	19
M4	F	3	Religious Studies	WebCT	37	24
Pre-1992 institutions						
H1	F	1 to 4	Information Science	WebCT	31	22
H2	M	4	Information Science	WebCT	37	21
K1	F	3+	Anthropology	Blackboard	34.5	26.5
K2	M	3	Sociology	Blackboard	32	27
L1	M	1	History	Blackboard	28	30
L2	F	4	Cultural Studies	Blackboard	38	21
N1	F	2	Economics	WebCT	25	27
N2	M	4	Geography	WebCT	36	29
N3	F	1 to 3	Law	WebCT	28	26

**Table 7.8: ATI scores and contextual factors**

The ATI scores seemed to indicate that the interviewees were on the whole more student- than teacher-focused in approach, that is, interviewees generally scored higher on the student-focused scale than on the teacher-focused scale, except L1 and N1 who scored slightly higher on the teacher-focused scale. Also, the mean on the student-focused scale was higher than the mean on the teacher-focused scale (see Table 7.9), although as the two scales were developed from the characteristics of two distinct and separate approaches it is not advisable to make a direct comparison, but rather to look at the variation in scores across the context being investigated.<sup>57</sup>

	Student-focused score	Teacher-focused score
Mean	32.9	22.1
Standard deviation	4.4	4.4

**Table 7.9: The mean and standard deviation of ATI scores**

I began by examining the distribution of scores on each scale, as illustrated by Figure 7.1 and Figure 7.2, but also decided to use the variation in scores on each scale to examine the effect of other contextual factors on the reported scores. My intention was to see whether it was possible to spot any contextual factors that affected the approach to teaching adopted within this sample of VLE users. This proved to be quite difficult because of the variety of experiences explored and the small numbers involved in the study, 31 lecturers.

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<sup>57</sup> Trigwell and Prosser have not published scale score norms for the studies they conducted using the ATI because they believe these will vary according to context (2004).



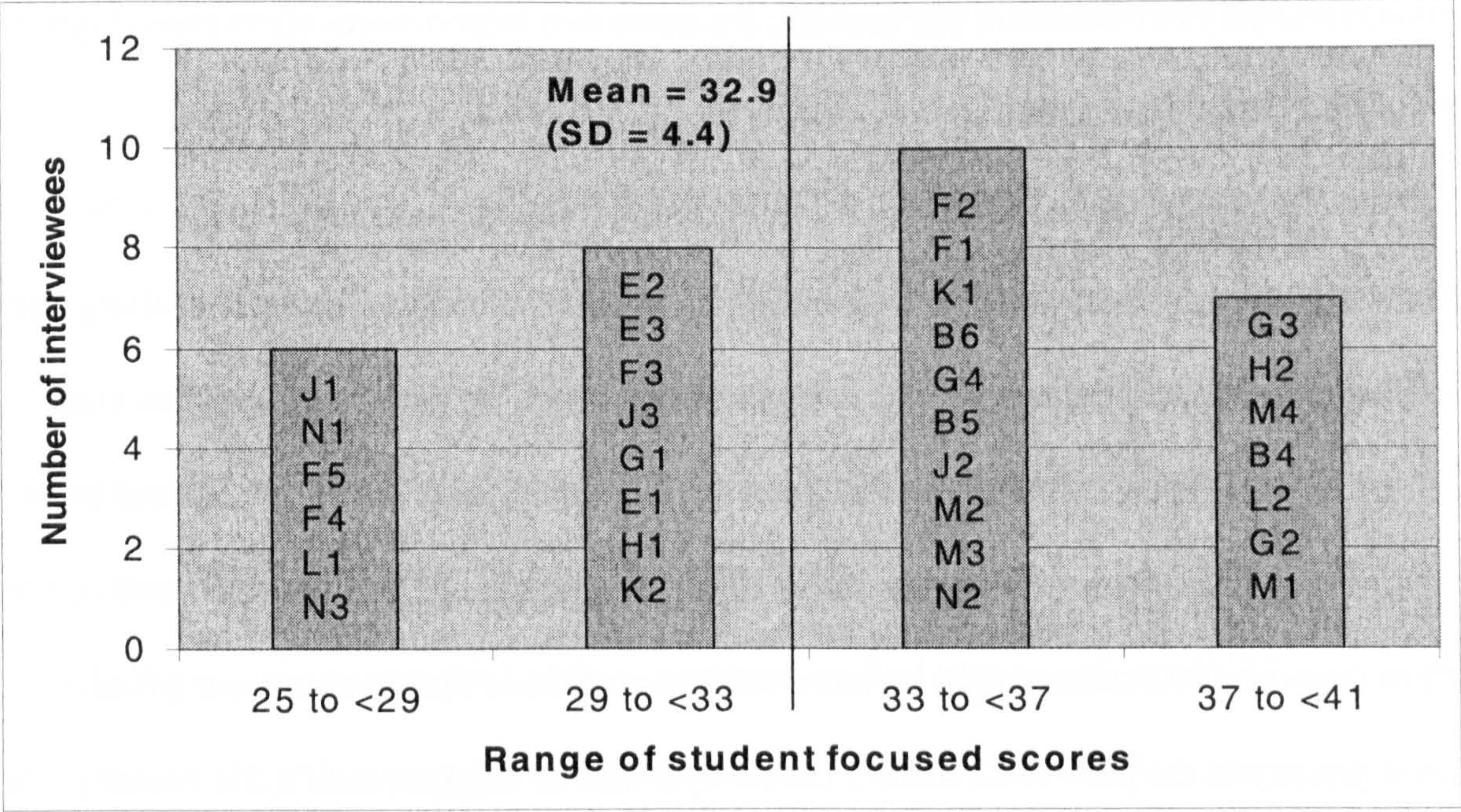


Figure 7.1: Distribution of student-focused scores

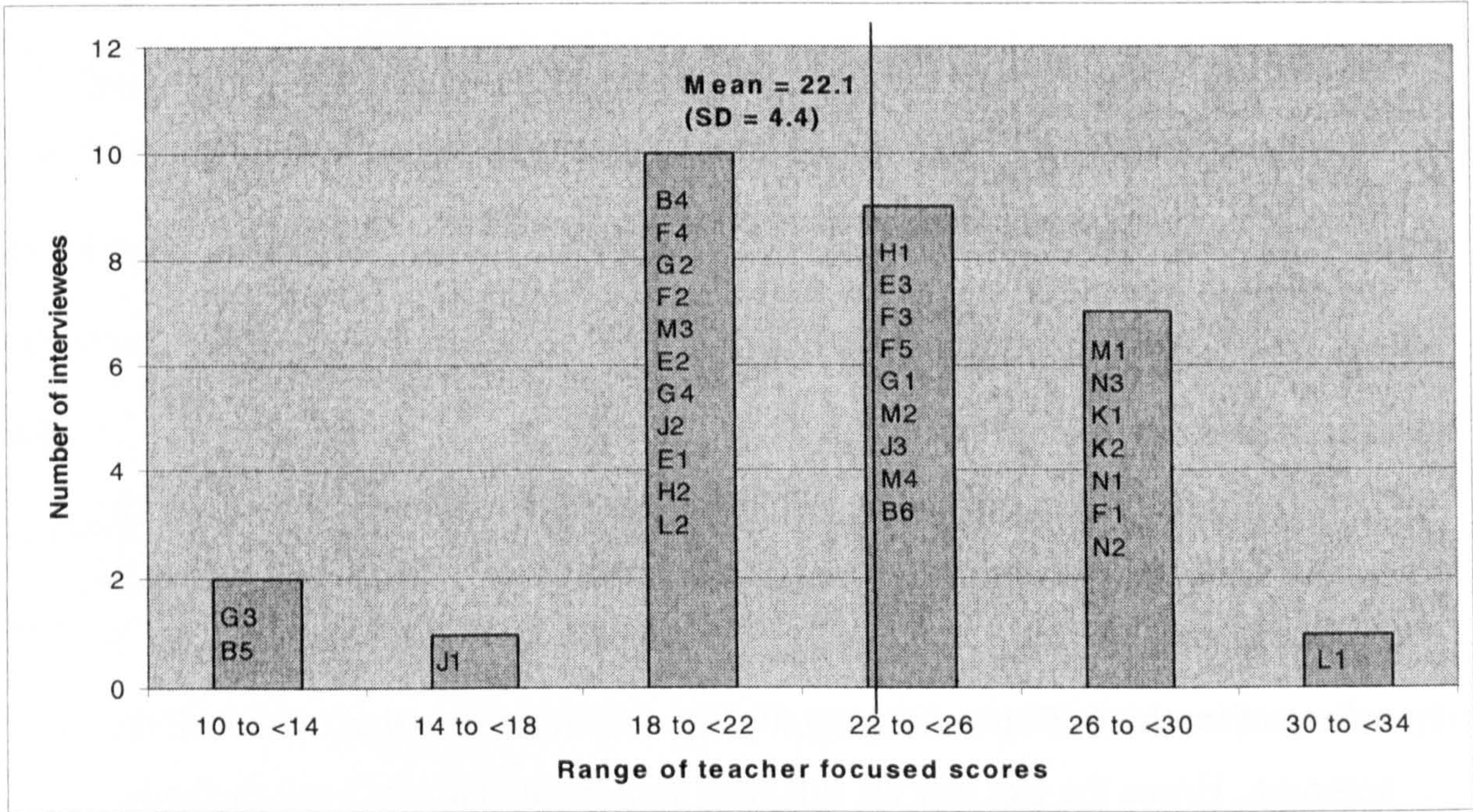


Figure 7.2: Distribution of teacher-focused scores

Nevertheless, examining the distribution of scores on each scale seemed to indicate that the type of institution might have had an effect, although this was only noticeable in the distribution of teacher-focused scores, as illustrated by Figure 7.2. The majority of interviewees who had teacher-focused scores lower than the mean were from post-1992



universities, only two were not (L2 and H2; the same two interviewees also scored highly on the student-focused scale).

This was interesting because when researching definitions of student-centred teaching one useful source was a document produced by the Council for National Academic Awards (CNAA, 1992). The CNAA was the degree awarding body for the post-1992 sector prior to their being granted university charters in 1992. This suggested that the ethos and culture within the post-1992 sector might be more student-centred or that teaching was given a higher priority in the post-1992 sector. Certainly a lack of support, until quite recently, for teaching innovations (including the use of ICT) in the pre-1992 sector together with an emphasis on research is underlined by interviewee comments:

“I think the conflict still remains between research and teaching. And they have now got a lot of people working on how to make the teaching environment more friendly, more conducive and so on and so forth. But at the same time they tend to if you like emphasise the research a bit. So there is very little support and encouragement given if you are doing, if you are doing innovations in teaching.” (N2)

“I think I, I feel rather trapped by the traditional lecture, seminar format which is what University N does. And I'm stuck with that. ... . teaching is very low priority at University N ... . But there's no collective, or very little collective culture of teaching. That's changing slightly. But that's been the traditional approach. Hence the fact that we still have very traditional text book methods, even getting approval to have any kind of continuous assessment is not the norm.” (N3)

“... I'm beginning to learn that the more you volunteer for things, the more you end up doing so. I know that sounds awful. But just the hard truth is that I need to focus on research. So I can't afford to be suddenly nominated as, you know, Miss Blackboard, because I look after the Web already, so.” (L2)

However, it is difficult to draw any definite conclusions about the effect of type of institution just by looking at scores on the two scales. Interviewees were not asked if they had had teaching experience within the post-1992 sector, so there was no way of knowing whether the scores reflected only the environment in which they were working at the time they were interviewed. The pilot study had indicated previous experience was an influence on teaching methods used. Furthermore scores collected only really told me about the approach to teaching in that particular context, rather than an interviewee's general teaching approach. A more valuable comparison, to find out the effect of VLE use, might have been to ask interviewees to complete another ATI for a non-VLE course at a similar level.

The variation of scores on each scale was then examined for significant differences caused by different contextual factors (gender, level of course, type of VLE and type of institution). On the face of it there appeared to be no significant differences, only one score was more than two standard deviations from either of the overall mean scores: G3 scored 11 on the teacher-focused scale. This was confirmed by looking at the means and standard deviations of scores sorted by context, Table 7.10 to Table 7.13, and comparing these to the overall mean, as shown in Table 7.9, see page 274. A significance test was conducted for each of the contexts where there were two samples that were large enough to be directly compared: gender, type of institution and the most widely used VLEs. As the samples involved were less than 30 in each case Student's t-test (unpaired, two-tailed) was used. The results, shown in Table 7.14, only indicated a significant difference in teacher focused scores from lecturers teaching at different types of institution; this reinforced what had been noted and discussed previously (see page 275).



Interviewee numbers		n = 18	n = 13
Gender		Male	female
student focused	Mean	33.89	31.50
	Standard Deviation	4.44	4.02
teacher focused	Mean	21.22	23.35
	Standard Deviation	5.17	2.82

Table 7.10: Mean and standard deviation by gender

Interviewee numbers		n=9	n=6	N=8	n=4	n=27
Course level		1	2	3	4	ALL
student focused	Mean	30.11	34.67	34.06	35.50	33.09
	Standard Deviation	3.89	5.99	3.12	3.11	4.49
teacher focused	Mean	22.56	21.33	22.19	23.25	22.28
	Standard Deviation	4.42	5.96	4.74	3.86	4.58
N.B. Total number of interviewees involved = 31, but some interviewees talked about use across a number of course levels, therefore they were omitted from this calculation.						

Table 7.11: Mean and standard deviation by course level

Interviewee numbers		n = 17	n = 8	n = 3	n = 2
VLE		WebCT	Blackboard	VLE-B	Learning Space
student focused	Mean	32.12	34.31	36.33	27.00
	Standard Deviation	4.34	4.10	1.53	2.83
teacher focused	Mean	22.21	22.06	18.67	20.00
	Standard Deviation	3.18	6.00	6.03	5.66

Table 7.12: Mean and standard deviation by VLE

Interviewee numbers		n = 22	n = 9
Type of institution		Post-1992	Pre-1992
student focused	Mean	33.18	32.17
	Standard Deviation	4.37	4.54
teacher focused	Mean	20.73	25.50
	Standard Deviation	4.07	3.37

Table 7.13: Mean and standard deviation by type of institution

Unpaired two-tailed t-test:	Student focused scores	Teacher focused scores
Male and female	0.130	0.154
Pre- & post-1992	0.577	0.003
Type of VLE (WebCT & Blackboard)	0.240	0.652

**Table 7.14: t-test scores**

It is important to point out that any anomalies, such as the wider variations in scores in some contexts, might be due to the small number of interviewees involved. For example there is a wider variation in teacher-focused scores with all VLEs save WebCT, but WebCT interviewees formed a larger portion of and therefore might be more representative of the overall sample (their mean scores were almost identical to the overall means). All the contextual means were within one standard deviation of the overall mean.

One item which might bear further investigation, at a later date, is the variation in scores at course level 2. This appeared to be greater than at other levels, although I make that observation with the same reservations about the small numbers in the sample mentioned above. When reflecting on the possible reasons for this it seemed that the main distinguishing difference between courses at that level, as described by the interviewees, was that some of the courses were introductory and some were continuations of level 1 courses, so students were expected to have an understanding of the subject and be able to engage at a higher level.

The ATI scores were used to select four transcripts in order to try and better understand the approach to teaching adopted and to investigate whether a VLE was used to facilitate or encouraged the use of a student-centred approach to teaching. Those who could be said to have outlying scores on both scales and in comparison with other interviewees were chosen so that the way they spoke about their teaching could be examined in greater detail.



Two transcripts where interviewees scored both low on the teacher-focused scale and high on the student-focused scale (G3 and B5) and two where the scores were both high on the teacher-focused scale and low on the student-focused scale (L1 and N1) were examined. These cases are described in the following section.

## ***7.4 Making the comparison with the interview data***

The four selected transcripts (L1, N1, B5 and G3) were reviewed in order to extract any comments made about teaching. Examples of teaching methods interviewees said they used were sought, as well as examples of the way they talked about their teaching philosophy and beliefs, what they thought their role was and the sort of things that affected the way they taught, such as student attitudes and abilities. These comments were extracted from the transcripts and used to illustrate a paper on the way the ATI had been used (Moron-Garcia, 2003).

People who attended the presentation of the paper were asked to examine the extracts and decide how they would categorise the featured interviewees, as more student-or teacher-focused in approach. What was interesting was that people seemed to have no problem identifying L1 as more teacher-focused and B5 and G3 as more student-focused, while they were less sure about classifying N1; one participant characterised N1 as teacher focus / student activity. When they were shown the ATI scores they also expressed surprise that N1 had scored lower than L1 on the student-focused scale. This seemed to underline the need to look at qualitative data alongside the quantitative data provided by the ATI in order to better understand the teaching approach adopted in a particular context. The transcript extracts are summarised in section 7.4.1 and the way the selected interviewees described their teaching and the use of a VLE is examined in section 7.4.2.

### 7.4.1 Four cases of VLE use

#### ***Case one: L1, male, history, Blackboard, first year undergraduates***

L1 said he used a VLE “...in all my courses to deliver boring stuff like, you know, reading lists and lecture notes, things like that.” He was quite negative about his students: “...I just basically treat students as people who know nothing and every attempt at every level are trying to sabotage the whole thing.” He characterised them as apathetic: “... they hate any work of any description by and large.” and as knowing little and being able to do little, making reference to their lack of IT literacy and note taking skills. He said that he “... decided ... that you have to build in things that force them to do tasks, which means they have to be assessed.” He explained that he sets “... little group projects that they have to go away and do and then write a report ... partly to get them to just develop their IT skills without realising they’re doing it and partly to interact.” This he describes as having “... to force them to be ... student-centred.”

He describes the course example we spoke about as “... a hybrid. It consists of a weekly lecture and a weekly workshop delivered by Blackboard. ... [that] is designed to reinforce themes introduced in the lecture. ... Occasionally inculcating skills ...” such as team working. He used quizzes to check understanding and “... reinforce themes introduced in the lecture. [...] It serves as an attendance record. It’s also there to test their note taking skills.” Students are allowed to use their notes to complete the quiz, “...they do recognise when good notes lead to higher quiz marks.” VLE use was also seen as an opportunity to learn IT skills.

He talked about using lectures to “... deliver information or ideas.” but also said “... I think lectures are too passive.” He only provided brief lecture “structure” handouts for students because “I don’t want them to get the idea that they can miss a lecture and work



off lecture handouts. Without going to the lecture, the handouts are worthless really.” He does not like seminars “... because ... I think most seminars are a free ride. I think they can be entertaining but that their educational value is very limited compared to what you could also do in that hour.” He talked about interactivity: “I think Blackboard gives you more chance of being interactive” which he described as giving students a series of tasks to complete in a workshop, while he went around talking to them and supporting those who needed it.

He said he used a VLE because he wanted to structure the student “... learning process ...” and because it provided flexibility. He did not want to increase contact hours as student numbers increase, which would happen if he were to use seminars (typically being a subsection of a lecture group, so that more students results in more or larger seminar groups). He recognised that many students have jobs and that attendance at lectures and seminars was affected, but that VLE use “... if done properly it can enhance the student learning experience. It can actually mean they can work more intensively and they're going to do teamwork, in a structured way. ... and it does mean that they can work more flexibly ...”. However he cautioned that “... it's not used very imaginatively by most people. I think ... it's a dangerous thing in some ways because it can encourage laziness on the part of teachers. I think there is a seductive notion that you can you know put all your lecture notes online and develop classes and say go away and do that to students.”

### ***Case two: N1, female, economics, WebCT, second year undergraduates***

N1 used a VLE alongside a Web site that “... just acts as a repository. ... all the lecture slides are on it. All the reading list is on it with clickable links to things on the Web, which the students really like. ... set of lecture notes and it will have gaps in it which get filled in

in lectures ..., but then if they miss lectures they can go back and look at them on the Web.” The main thing the VLE was used for was quizzes.

For N1 VLE use was about ensuring students did the necessary work. It was used to keep “... tabs on students because previously ... they had questions set but they didn’t do them.” She wanted to ensure that students did the work set because this was an important part of the learning process:

“... I thought of the whole process as not so much checking what students had learnt, but making them do things in order to learn. [ ...] the department feels absolutely that students learn by doing problems. There's actually, I mean the students are quite apt to think that what they learn is seeing other people solve problems. But in fact it's the struggling for yourself to do something that generates the learning.”

Her teaching and learning strategy was: “... meet an idea in lectures, then have a look through worked examples and do the quizzes online for the class a week or so later.” The results of the quizzes then informed class teaching, enabling teaching assistants to concentrate on particular problems and students in difficulties:

“...not using WebCT as an end in itself but as a way of modifying and we hope to prove in the face-to-face teaching. ... what can happen with problem classes if the students haven’t done them, is that the class teacher ends up writing it all down on the board and the students end up copying it all down and not much teaching or learning is done.”

The way in which she used the VLE was affected by worries about attendance: answers were not put online “... because we wanted to make them come to class.” Although the VLE facilitated the provision of “... worked examples ... much more structured material.



She thought that a teacher needs to be confident to deal with class discussions: "... you don't have to go through everything because the students have got a lot of it. You can focus on some things and not on others. And get the students talking more. That requires quite a lot of confidence on the part of a class teacher to handle a class, like that." As a consequence she made sure class teachers had "Lots of briefing documents and briefing meetings ...".

She thought students needed direction in selecting Web resources and was aware that cultural differences meant some students were reluctant to post messages within a discussion forum set up for students to ask questions, because they were visible to all. She encouraged these students to e-mail her and then posted a suitable reply to the forum without reference to the student who made the original enquiry.

***Case three: B5, male, English, VLE-B, third year undergraduates, non-native English speakers***

B5 said that he "... took a very pragmatic approach to VLE-B [... using] only the tools which I was familiar with which seemed most obviously useful ...". He used a VLE to support group work that was conducted in English because "... they will find themselves interacting with other people through the medium of English when they go back to their own country ...". He wanted them

"...to get used to that idea that what they say can be interpreted in a hundred different ways so they have to be careful not just about linguistic accuracy but in how they come across to the other person. And secondly I wanted them to do group work and because there's a problem of mixing nationalities, that there tends to be a preponderance of one particular nationality at a particular time, I wanted to mix groups who are on different sites."

He set up the activity as group work so that students had to "... negotiate meaning ... logistics and responsibilities ..." with fellow group members about "... whose opinion was right about different versions or different corrections."

He accepted that activities might not go as he planned, welcoming comments from students that asked for clarification and forced them to articulate problems that they encountered: "...it's probably more valid or more realistic communication than what I'm getting them to do in class which is usually set up and hypothetical." Not all the students actually used the VLE to facilitate the completion of the task set, but B5 acknowledged that "... it's part of the learning experience for them to decide" how best to use the VLE:

"... the evaluation of the whole thing was the real learning experience from my point .... The actual doing of the role play, I was judging it on product, whereas the evaluation was more to do with the process and what they themselves understood about all these different areas from doing it. So that was, well I think it was more valuable for their learning ...".

He indicated that an important part of the role play exercise they have to do is "... the evaluation of it from their own point of view. The actual doing of the role play I was judging it on product, whereas the evaluation was more to do with the process and what they themselves understood about all these different areas from doing it." The role play was based on a current affairs issue with four different roles. Each group of three took on one role "... and what they had to do was produce a series of documents which the other groups responded to."

He says his teaching "...sessions are now for discovery learning or workshops, there's not a lot of sacred text that needs to be imparted to students." He does not provide content "... because it's up to the students to research a real case and relate it to the fictional case. ... I



provide them with the structure and say go and find out about this ...” Structuring the time outside the classroom is very important “... because we only have so many hours a week with the students, and because those are insufficient to make a ... real impact on a person's ... command of language, ...”

He pointed out that he “... wouldn't bother with [VLE use] in the classroom because you know classrooms are about interaction, face to face interaction. ... anything ... on a screen is for outside class. [...] part of my job is to develop their ability, to communicate and now I don't feel that you know they should be learning to word process in my class.”

#### ***Case four: G3, male, English, Blackboard, second year undergraduates***

G3 described using a VLE to hold material that “...allows [students] to build on seminar and lecture material, but to move away, to begin to explore things of their own and articulate their own research.” He hoped it “... enriches their face-to-face contact ...” He was very clear that “...we [in this School] are not interested in using Blackboard to replace face-to-face tuition ... it was certainly felt that our students expect face-to-face. ... social interactions are important but I mean we started from the beginning with a model of enhancing learning rather than replacing.” Indeed they found that students “... regard seminar rooms as where they do their interactions.”

Other technology tools used included PowerPoint which he used to give students “... a map of the lecture. ... if students have a written, some kind of bullet points or some kind of framework that you're talking about I do think it goes in better, I think they do actually learn better. And they have certainly said about the lectures: third year lectures using PowerPoint that the lectures are very clear. That no one could go away from the lecture without having a clear sense of the basic concepts and arguments. ... [it is] brilliant for

images, ...” He also attempts to show students that “... this stuff we're doing in seminars. This isn't, we haven't just made this up, look academics all over the world are actually discussing it ...” by providing printed copies of discussion list extracts.

He described his VLE use as providing a “... gateway to materials.” There was a list of “... good quality Web sites with further material on about those authors or a particular play we're studying.” Although students were also encouraged to evaluate Web resources through the use of “... the odd wacky site ...”. He lets them know that “... this isn't good site but it has got some kind of strange ideas which you might like to think about ...”.

The resources sign-posted for the students were intended to give some context to their learning: “So for example they have to study Chekhov and we have designed ... a set of activities where we get them to think about ... late nineteenth century Russian history, the time when Chekhov's writing.” The aim was to get students to make connections between the fictional and real events and to develop an understanding of the historical context. “It's kind of asking students to think about things.” And to provide “... extensions of activities we haven't got time for and we can't necessarily easily do in a seminar room ...”. The examples he gives are activities around the use of language where the expertise is found outside the department and available online and film versions of plays.

His use of a VLE was part of a project to encourage independent learning and as such “... we do not want to assess it. ... It seemed to us that if you tie everything to assessment, you're not encouraging independence in the true sense. ... that's not independence, that's compulsory.” He recognised that English students have traditionally “... always done a lot of independent work because they have to do lots of reading”, so his aim was to encourage them to do just that bit more because “... ‘graduateness’ is not about I'm doing it because



I've got to do it. It's about I can do something extra ... if I read around this problem I'll come to some different answers." He also said it was "... a matter of developing self-confidence ..." and of getting "... them to see that lecturers are giving a view, they might have given a different view last year. ... to get them to see there are many different angles which is really fundamental to humanities subjects ...".

Extracting the comments that interviewees made about their teaching made it possible to examine the language used for issues and strategies in common and to identify differences in the way they described their intentions and the context of use. The way they talked about teaching was also compared to the student-centred teaching methods categories developed from the pilot study data in order to check what the ATI scores seemed to indicate, that interviewees were more student- than teacher-focused overall. The way this was done is explained in the following section.

#### **7.4.2 Comparing the interview data**

Table 7.15 summarises and paraphrases the way the selected interviewees talked about their teaching and their use of a VLE. By considering the effect of context it is possible to see a distinction between the two groups of interviewees that might account for their different ATI scores. L1 and N1 both used examples of teaching on introductory courses and using activities to reinforce concepts taught in lectures, while B5 and G3 spoke about students who already had a grounding in the subjects being studied and about encouraging students to make meaning and extend what they already knew.

<b>Less student-focused (L1, N1)</b>	<b>More student-focused (B5, G3)</b>
Teaching about reinforcement, completing specified tasks, lack of trust in students.  VLE use about checks and control, providing flexible access to information, learning skills.	Teaching about supporting students to go further, encouraging exploration and the evaluation of different opinions, trust in students to make a judgement about their own learning needs.  VLE use about supporting access to a wider variety of resources and points of view.
It's about structuring learning, teaching skills, "forcing" students to do the work, checking understanding, reinforcing teaching, delivering information, keeping tabs on students. Attendance is a concern as is the quality of the information students choose to use, therefore they need guidance. Use of the VLE is expected and often enforced. Cannot or do not want to increase contact time. VLE use is about flexibility.	It's about accepting different solutions, supporting critique and evaluation, reflection and making meaning, negotiation, focus on process rather than content, the enrichment of face-to-face teaching, enabling students to go further, exploration, making things real. The lecturer does not have all the answers, but guides. Students have a lot of pressures on them. VLE use is not necessary, it's just a vehicle or a repository, lecturers recognise that contact time is not enough, so it is about structuring time outside the classroom. VLE use is about flexibility.

**Table 7.15: Comments relating to teaching and the use of the VLE**

The difference between the approach to teaching of the two groups of interviewees is also apparent in the way they describe their use of a VLE. The first column of Table 7.16 highlights the way the selected interviewees explained what they were trying to do while the second column relates these explanations to the categories and descriptions of student-centred teaching methods (see Table 3.13) developed from the pilot study data. This indicated that those interviewees who appear to be more student-focused, as measured by the ATI, were those who also talked about teaching to encourage reflection and evaluation, that is there was more of a conceptual change focus.



L1	<p>“... you have to build in things that force them to do tasks. [...] you have to structure the work for the classes as workshops, [...] a quiz about the contents of the lecture, ... introduce some structured Web sites ... that I have checked ... or ones I’ve made myself. They’re ... divided into groups ... each group is supposed to write a weekly report and those reports are then assessed and that goes forward to their final mark.”</p>	<p>Active learning</p> <p>Guidance and feedback</p> <p>Collaboration</p>
N1	<p>“... students were very often not preparing. ... you could meet an idea in lectures, then have a look through worked examples and do the quizzes online for the class a week or so later. [...] with these worked examples we’d give them much more structured material. And they knew exactly where to look for something similar [...] I thought of the whole process as not so much checking what students had learnt but making them do things in order to learn ...”</p>	<p>Active learning</p> <p>Assessment informs teaching</p> <p>Feedback and guidance</p>
B5	<p>“... I wanted them to do group work [...] evaluation of it from their own point of view ... negotiating meaning and ... logistics and responsibilities. [...] part of the learning experience for them to decide [how to complete the task ...] there’s no content ... it’s up to the students to research a real case and relate to a fictional case. ... I provide them with structure [because of lack of contact time ...] most of my sessions are now for discovery learning or workshops, there’s not a lot of scared text that needs to be imparted to students [...] my job is to develop their ability to communicate ... reflection is the most important thing ... it’s the evaluation which actually makes the difference ...”</p>	<p>Evaluation</p> <p>Active learning</p> <p>Encourage reflection</p> <p>Collaboration</p> <p>Guidance and feedback</p>
G3	<p>“... material which allows them to build on seminar and lecture material, but to move away, to begin to explore things of their own and articulate their own research. [...] enriches their face-to-face contact. [...] get them to try and ... make connections ... {provide} a kind of mini tutorial of what we can use that resource for and then formulated a research question and tested it. Taken them through the processes [and then got them to] think of a question of your own. [...] there’s many, many different answers and loads of material out there ... they do need guidance to help them find their way through. [...] lectures and seminars introduce certain topics ... But try and encourage the idea that they can enhance that ...”</p>	<p>Encourage reflection</p> <p>Guidance and feedback</p> <p>Active learning</p> <p>Evaluation</p>

**Table 7.16: Highlighting the way interviewees described their teaching**

People attending the paper presentation referred to earlier had difficulties categorising N1 when examining the way she spoke about her teaching. On the basis of the ATI scores L1

and N1 appeared to have a similar approach to teaching: both scoring higher on the teacher-focused scale than on the student-focused scale (and within three points of each other). While N1 (25) appeared to be less student-focused than L1 (28) she was also less teacher-focused (28 to L1’s 30)

L1 was easier to categorise as less student-focused because of the way he spoke about his students as “apathetic” and “... people who know nothing...” and what he needed to do to teach them how to learn and to motivate them: frequent comments about forcing them to learn and reinforcing what he taught in lectures. N1 on the other hand seemed to speak more often in terms of concepts that could be considered student-centred: “... learning by doing ...” and advising class teachers “... you must not humiliate students in class.”

These differences, summarised and paraphrased in Table 7.17, revolved around their attitude to their students (L1 was quite dismissive and negative, whereas N1 seemed keen to push students and create a supportive atmosphere) and a difference in intention (L1 wanted to teach skills, N1 wanted to impart subject knowledge). In the light of comments made earlier it is also worth pointing out that there was a difference in course level in the examples being used, L1 was level 1 and N1 was level 2. This may account for some of the differences. These were interesting findings in that they seemed to indicate an actual difference in approach which was not reflected in the ATI scores.

L1	N1
Students know little and do not have the necessary skills (IT or note taking). Lazy, they need to be forced to work – tying in assessment will do this. VLE use is about teaching skills and reinforcing content.	Students need to be encouraged and supported to do the required work, it’s important not to make them feel uncomfortable. It’s about imparting subject specific knowledge VLE use is about informing class teaching, it gives them experience in doing problems.

**Table 7.17: Attitude to students and intention**



## **7.5 Conclusion**

The previous two chapters have shown that interviewees were on the whole enthused about trying out different ways of teaching and supporting their students. They participated in VLE use mostly out of interest and many of their intentions were classified as ‘facilitating learning’ rather than solely ‘course management’ reasons (Chapter 5). They spoke of evolving use, but said they felt inhibited by contextual factors (such as the teaching model expected by their institution, student reluctance to change and colleague unwillingness to engage with the technology available) and their own lack of understanding about what it was possible to achieve with a VLE (Chapter 6). This chapter went on to explore actual VLE used described and the effect the approach to teaching adopted by interviewees (lecturers using a VLE) might have on VLE use.

The purpose of this chapter was to use the data collected for the trial and main study to answer the third research question “How do lecturers say they use a VLE?” In doing that this chapter sought to examine the claim that VLE use would facilitate and encourage the use of student centred methods (for example, Wegner et al., 1999; Westera, 1999). In actual fact it was only possible to identify whether interviewees reported using a VLE to support student centred methods. This was done by identifying the approach to teaching adopted by lecturers using a VLE and exploring one example of VLE use to support face-to-face teaching.

The Approaches to Teaching Inventory (ATI) was used to classify interviewees in terms of their approach to teaching; this was achieved by looking at the scores the interviewees obtained on the two separate scales of the inventory. This appeared to show that lecturers who agreed to be interviewed for this study on the whole tended to have a student-focused

approach to teaching; the mean student-focused score was higher than the mean teacher-focused score. Although due to the construction of the inventory it is not really possible to make a direct comparison between scores on the two sub-scales.

Nevertheless the intention behind the use of the ATI was to employ it to identify whether or not an interviewee was likely to use student-centred methods. Therefore the student- and teacher-focused ATI scores were examined (Section 7.3) and comments from interviewees who had outlying scores on each sub-scale of the inventory and in comparison to other interviewees were explored in order to further understand the approach to teaching adopted (Section 7.4).

The examination of four transcripts representing interviewees who appeared to be either more or less student-focused made it possible to identify the way in which a VLE was used. It also indicated that there were qualitative differences in the way interviewees who scored similarly spoke about their teaching. These differences related to an interviewee's attitude to students or what they thought their teaching role was and the intentions they had for VLE use. The teaching methods described were compared to the student-centred teaching methods categories created from the pilot study data and confirmed that interviewees did indeed report using a VLE to support student-centred methods.

This demonstrated that the ATI was useful in broadly categorising an interviewee's approach to teaching and the teaching methods they were more likely to use, but that interview data was needed to more fully understand the approach taken in a particular context.



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## **Chapter 8: Reflecting on the research**

The purpose of this research was to examine the perception that the use of Web and Internet-based technology can enhance teaching and learning. It concluded that the idea of enhancement appears to come from the association of Web and Internet-based technology (on which VLEs are built) with the creation of student-centred learning environments and the facilitation of student-centred methods (Collis, 1996; Wegner et al., 1999; Westera, 1999). This is important because other research has shown a correlation between higher quality learning outcomes and a deep approach to learning (Marton & Saljo, 1997) and between a surface approach to learning and a teacher-focused approach to teaching (Trigwell et al., 1999).

An investigation into lecturer use of Virtual Learning Environments (VLEs) in UK higher education sought to understand whether VLEs were indeed being used to facilitate student-centred learning. The focus of the research was the individual lecturer using a VLE to support face-to-face or campus-based teaching.

### ***8.1 Research design***

The research design was conventional in construction: a literature review to outline the area for investigation followed by a pilot or feasibility study to develop the methods and then the main data collection. It evolved in response to and was informed by the data collected. The research focus moved from an investigation into why and how technology was used, to include an exploration of lecturers' intentions in using a VLE, the teaching approach adopted (as facilitated by technology use) and their perceptions of the contextual factors that affected their use. The literature review conducted at the initial stages of research (see Chapter 2) indicated the need to consider contextual factors that might impact



on VLE use and to take account of the complexity of the environment in which lectures were working.

This same literature review indicated a perceived link between the use of Web and Internet-based technology (on which VLEs are built) and student-centred learning. This was further reinforced by the publication of survey results in 2001 and 2003 (Browne & Jenkins, 2003; Jenkins et al., 2001) that indicated “the enhancement of teaching and learning” was the main reason institutions were investing in VLEs. Although the meaning of enhancement was not explained it was assumed that it too meant the use of student-centred methods because of the demonstrated links to higher quality learning outcomes referred to above.

This research took the form of an interview study. The rationale for this is explained in Chapter 3 as is the way the pilot study helped to revise the research questions, re-focus the interview questions and clarify what was meant by student-centred teaching methods. The main data collection involved 31 humanities and social science lecturers from ten higher education institutions who were interviewed in order to explore why and how a VLE was used and the contextual factors affecting use. Those interviewed for the main study were also asked to complete the Approaches to Teaching Inventory (ATI, Prosser & Trigwell, 1999; Trigwell & Prosser, 2004). The conduct of the main study and the use of the ATI are described in Chapter 4. There are problems associated with relying solely on self-reported measures (Murray & MacDonald, 1997), therefore the rationale in using both qualitative and quantitative instruments was to provide a check on the way interviewees described their teaching.

One of the original intentions of the research was to investigate whether the use of a VLE had encouraged the adoption of student-centred methods and interviewees were asked:

“Has the use of the VLE changed anything that you do in face-to-face sessions?”

However, within the constraints of this research it was difficult to do this: it was not a longitudinal study and relied on interviewees reporting their own practice. Any comments obtained in this way were classified as either an intended use (within the ‘reasons – intention’ category) or as actual use (and so helped define the teaching methods used), depending on how the interviewee described them.

The interviewees were purposively sampled and, as noted previously, represented lecturers who could be considered innovators or early adopters (see page 109); as such they were viewed by the people nominating them for participation in this study as “people doing something interesting”. Moreover the main study interviewees were from the social sciences and humanities discipline areas which, it could be argued, pre-disposed them to being more student-centred (with a disciplinary emphasis on discussion, evaluating alternative interpretations and developing students as subject participants as opposed to the acquisition of factual knowledge more common in science-based subjects). Therefore great care needs to be taken in generalising from the findings.

The pilot study interview data was initially analysed using pre-established categories informed by the literature and previous research (Moron-Garcia, 2000). This proved problematic, as it did not allow for other issues to be categorised. Therefore the categories were revised to include additional ones derived from the data. The way this was done is described in some detail in Chapter 3 as a way of explaining the procedures used, but also to illuminate a process that, as a novice researcher, I found bewildering and sometimes overwhelming.



As a consequence of lessons learnt from the pilot study and due to the refocusing of the research, the main study data analysis used a combination of pre-established and data derived categories. The pre-established categories were informed by the themes or issues explored in the interview, which in turn related to the research questions. A qualitative analysis software programme QSR N5 was used to aid this analysis and proved extremely useful in facilitating the searching, sorting and classifying of the large amounts of text-based data created. The analysis of the main study data is explained in Chapter 4.

The research questions were created with reference to the literature review and refined and refocused in response to the evolution of the research design. The final questions were:

- Why do lecturers say they are using a VLE?
- What do lecturers say supports or hinders their use of a VLE to support teaching and learning?
- How do lecturers say they are using a VLE to support face-to-face teaching?

The findings are briefly outlined below and reported and discussed in Chapters 5, 6 and 7.

The use of a large amount of verbatim quotes is in line with my intention to provide as rich a picture as possible of the use of VLEs in campus-based higher education in the UK.

## ***8.2 Findings***

This section briefly reviews the findings as they addressed the research questions.

### **8.2.1 Why do lecturers say they are using a VLE? – Chapter 5**

The reasons for use were classified in terms of original motivation (interest and pressure) and intended use (course management and the facilitation of learning). There was an alignment between the facilitation of learning categories and the student-centred teaching

methods identified through the pilot study that indicated that, in intention at least, many interviewees used student-centred methods. Moreover, within the 'interest' sub-category change was the most cited reason for involvement with a VLE and the sorts of change described had elements of student-centredness (see page 157).

### **8.2.2 What do lecturers say supports or hinders their use of a VLE to support teaching and learning? – Chapter 6**

Interviewees described their VLE use as being affected by a variety of inter-related issues. Four sets of issues were identified as impacting on the use of a VLE: student, technical, pedagogic and institutional. It may appear, from the numbers of concerns voiced, that the future of learning technology is gloomy however, on closer inspection what interviewees were calling for was the time and space to try things out and the recognition of effort expended. So the true picture is more one of gradual change, with reservations.

### **8.2.3 How do lecturers say they are using a VLE to support face-to-face teaching? – Chapter 7**

The ATI scores seemed to indicate that interviewees were more student- than teacher-focused in approach and therefore more likely to adopt student-centred methods. Analysis of comments from four selected transcripts seemed to confirm that they did use a VLE to support student-centred teaching methods and this case-based approach showed a greater variation in the approaches adopted than that shown by using the ATI alone.

Interviewees indicated that the way they taught, and the use a VLE was put to, was influenced by contextual factors and their intentions, which in turn were influenced by their understanding of their own role and their attitudes. By investigating why, how and



what affects the use of a VLE this research attempts to provide a fuller picture of the pressures lecturers are under and the challenges they face.

### ***8.3 Contribution made by this research***

When this research began a review of the literature painted an uncertain picture about likely adoption and application of ICT in higher education. It did indicate that there was a move to encourage its use for a number of reasons, not least transferable skills and expansion, and that benefits could be accrued from use, for example the move towards a more student centred model of teaching (see Chapter 2). We now know that the use of learning technologies is becoming a "... vital part of post compulsory education" (Jacobs, 2003) and that the numbers using VLEs have been increasing (Browne & Jenkins, 2003; Jenkins et al., 2001).

However, despite the claims that there are large numbers of users we know very little about lecturers who actual use VLEs, so this research is timely in providing a richer picture of actual VLE use than that that provided by statements of user numbers and sector wide surveys. In reporting the subjective views of academics who have adopted ICT to support their teaching it contributes to an under researched area (McShane, 2004). Moreover it fills a gap identified in the data reported in the UCISA surveys.

The 2003 survey (Browne & Jenkins, 2003) was only able to report on the institutional perspective which still cited "enhanced teaching and learning" as the most common reason for considering the use of a VLE (65.9% of respondents compared to 43% in 2001 - Jenkins et al., 2001). It appeared to ignore the views of the 'practitioners' whose priorities were different when surveyed in 2001; their main reason was flexibility. The data



collected for this thesis (see Chapter 5) indicated that lecturers' reasons for use were in fact many and complex.

At the time of writing e-learning is still reported as a stalled revolution. Zensky & Massey place part of the blame at the feet of lecturers who they say refuse to change how they teach:

“Even when they use e-learning products and devices, most [lecturers] still teach as they were taught – that is, they stand in the front of a classroom providing lectures intended to supply the basic knowledge the students need.”  
(2004, p. iii)

This is very reminiscent of the arguments made nearly ten years ago which pointed out that thinking about the teaching and learning process was what was important in deciding how to apply technology to education (Alexander, 1995; Mason, 1995). A few years later Kearsley warned that “educational technology is ... a distraction (on a grand scale) from what matters most – effective learning and good teaching” (1998, p. 47). He critiqued the overly optimistic claims that made little reference to the “organisational, social and personal considerations at play in a given educational setting” (*op. cit.*, p. 50) that affect its use.

It is clear that technology use alone does not cause pedagogic change, however this research has shown that lecturers are becoming more aware of the need to rethink their teaching and how to support their students' learning. One of the benefits (and challenges) of engaging with a new environment, as articulated by interviewees, is the potential of facilitating new ways of working and of learning new teaching skills (see Chapter 6). Most interviewees described themselves as exploring VLE use and as trying out new teaching strategies. Their gradual application of a VLE to a wider range of courses and the tailoring

of use to courses already ‘online’ was in line with the evolutionary growth in the use of learning technologies identified by Seale (2003).

VLEs are considered to be part of the problem rather than part of the solution: “Blackboard and WebCT make it almost too easy for faculty to transfer their standard teaching materials to the Web” (Zemsky & Massy, 2004, p. 53) and so, the implication is, adhere to the transmission of information. Interviewees such as B4 and L1 showed themselves to be aware of this possibility, but B4 at least described how his use had moved on to apply less of a content-based approach (see Chapter 6). It appeared that VLE use had facilitated the reflective process. Furthermore interviewees did not describe the blanket use of static content, but rather the use of ICT tools to support active learning (Chapter 7).

Oliver says that we need to understand why some online education has failed (2003) in order to move forward. Chapter 6 contributes to our understanding in identifying the contextual factors that impact upon lecturers’ adoption of a VLE and should provide cautionary lessons and indicators for those seeking to encourage VLE use. The interviewees described themselves as well supported and could be characterised as cautious enthusiasts who have concerns about institutional intentions and the effect of VLE use on their students as well as the impact of wider adoption on the support services that they benefit greatly from, being early adopters.

### **8.3.1 Implications for different audiences**

This research has a number of implications for different audiences. Clearly there are resource implications that need to be considered by institutional managers, not least to ensure that everyone has access to the same version of standard software. Decisions need to be made about the type of VLE use to be encouraged and supported and what impact



this may have on current structures, schedules and workload (something highlighted by current literature, for example Garrison & Kanuka, 2004). The use of incentives such as time to develop and adapt courses as well as responsibility posts have proved effective to encourage use and provide a core of users who can disseminate practice. The adherence to the lecture plus seminar model has proved restrictive for some trying to change their practice.

Staff developers need to consider the best way to develop the IT literacy of staff while encouraging them to explore different models of teaching and learning. The type and focus of staff development and support is a major theme in recent literature on lecturer use of Web and Internet-based technology, underlining issues raised by this research. The need to develop lecturer IT skills is recognised by Haynes et. al. (2004) while Kent described the importance of having an institutional strategy that informs what is considered effective use and then supports its application (2003). Grant (2004), McShane (2004) and Errington (2004) highlighted the importance of taking into account lecturers' perspectives on professional development, their role concept and teaching choices and what they believe is possible in trying to understand why lecturers became involved in innovation and how best to begin supporting them.

Lecturers who are themselves contemplating VLE adoption should find out what support and time is available to them in developing or adapting their courses and seek examples of 'good practice' within their institutions or elsewhere. The Learning and Teaching Support Network (LTSN) subject centres would be a good starting point (now part of the Higher Education Academy, <http://www.heacademy.ac.uk/474.htm>), as would the recently published set of case studies from JISC (2004). They need to decide what they want to do



with the technology and not underestimate the amount of time it takes to create online materials.

The categories developed to describe use and factors affecting use could be used as a starting point for researchers investigating the way in which other forms of technology (such as mobile technology) are adopted and teaching is supported. This research could progress in a number of ways, these are outlined below.

## **8.4 Future research**

There are a number of possibilities for further exploration suggested by this research.

**Longitudinal research** - It was not possible to identify whether or not VLE had changed anything interviewees did, although they themselves reported evolving use. Therefore it would be interesting to revisit interviewees to investigate whether their use has evolved and the arguments for the rethinking of educational practice have been taken on board.

**A broader case study** – It was not possible to observe teaching practice or talk to students for this research. Therefore a broader case study approach that explores the materials used, conducts observation and takes into account the impact on students would extend the reach of this research.

**A closer look at the effect of course levels** – A possible difference in approach adopted that related to the type of course studied was observed in Chapter 7. However, as the numbers involved in this study were not large enough to draw any concrete conclusions it would be interesting to enquire into this potential effect.

An investigation into changing academic practice – One necessary outcome of ‘new’ technology use is thought to be a move towards a team-based approach to creating online resources (Laurillard, 2002; Shephard, 2004; Taylor, 1999; Weller, 2002), as seen in the distance education model typified by the Open University. Therefore it would be interesting to revisit some of the institutions and academic departments to explore whether this is likely to happen and what impact this might have on answering some of the concerns interviewees raised (time and effort, recognition).

Investigate other areas of use – One of the possible shortcomings of this research was that some people might argue humanities and social science lecturers are already more student-centred in approach. Therefore it would be useful to compare use in another discipline area.

The effect of the inclusion of ICT into mandatory teacher training courses – Gibbs and Coffey (2004) have already shown that training early on in an academic’s career (before they have had time to pick up bad habits) can affect their attitude to teaching. A fruitful study would be the impact of the certificate in higher education teaching on the use of ICT to support student-centred methods.

## **8.5 Conclusion**

This research provides a snapshot of lecturers’ experience and perceptions about the use of Web and Internet-based technologies to support teaching and learning. It has shown that lecturers are using VLEs to support student-centred methods and that use is not completely content-driven. However, that use is affected by a number of factors including interviewees’ conceptions of teaching (Chapter 7) and their understanding of what a VLE could offer them or what they thought it could do, expressed as motivation and intention

(Chapter 5). This in turn was affected by the context it was used in and dependent on the type of support offered by their institution and department, their ICT comfort level and other factors such as types of students (Chapter 6). This indicated a relationship between the reasons given, outlined in Chapter 5, and the sorts of environmental and personal issues categorised as “lecturers’ needs and concerns”, explored in Chapter 6, and which then resulted in the actual use explored in Chapter 7.

It is clear that lecturers are under a lot of pressure trying to cope with the changing face of higher education, for some ICT will be one pressure too many. For others it is a tool to help them do their job (both in terms of administration and teaching) and one of the additional benefits appears to be that it encourages thought about the teaching and learning process. Nevertheless it is still worth remembering that while “The technologies can *enable* worthwhile learning to happen, they do not *cause* it to come about” (Kirkwood, 2002, p. 5).



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**IN**

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# Appendix A: Pilot study interview schedule

name:	date:	time (from - to):
title:		

Questions	Notes
<div>Background</div> <div><ul style="list-style-type: none"><li>Length of time lecturing / in this job?</li><li>Title?</li><li>Subject specialism?</li></ul></div>	
<div>Teaching</div> <div>How do you teach (generally)?</div> <div><ul style="list-style-type: none"><li>Could you briefly run through what you do when you teach (i.e. in lectures / seminars / workshops) Do you have a preferred way of teaching?</li><li>Have you developed any particular techniques to deal with specific kinds of classes / students? E.g. ones who do not have a required level of knowledge</li><li>What strategies do you use when something does not go as planned / expected?</li><li>What do you consider to be your most successful approach?</li><li>What would you say were your strengths as a teacher?</li><li>Is there anything or anyone who has influenced your teaching and in what way? (e.g. any training?)</li><li>What do you think excites or interests students about your subject and what do you do to make the important but less interesting elements more student-friendly?</li><li>How do you evaluate what you do?</li><li>How has student feedback (e.g. modular evaluation forms) affected how you teach?</li></ul><div>Peer feedback – appraisal?</div></div>	



### **Teaching with Web and Internet-based technology**

- What technology is available, for staff use, within the Institution?  
– and for students?
- What support or training is there?  
Have you received any training – institutionally provided or personally sought?
- How confident / comfortable are you with using Web and Internet-based technology?  
– in general  
– in your teaching  
technical proficiency ? on a scale of 1 = not computer literate to 5 = expert
- What led you to use Web and Internet-based technology in your teaching?
- Do you use Web and Internet-based technology in teaching activities or to support students outside contact times?
- How does the availability of technical support while teaching / setting up activities affect what you attempt?
- Tell me what sort of technology you use and the reason behind your decision?

#### **Sort of tech used:**

- Generic technology (e.g. Web pages and an e-mail package)
- virtual learning environment?

#### **Explore use of electronic communications**

- e-mail
- discussion list / forum
- electronic delivery / return of work

<p><b>Change</b></p> <p>Has the use of Web and Internet-based technology changed what you do in any significant way?</p> <p>Has it changed the way you teach – less f2f / decided not to use tech because f2f more suitable?</p> <p>Any surprises / unexpected benefits?</p> <p>Difficulties / problems?</p> <p>Has this changed how you think about teaching?</p>	
<p><b>Further comments / thoughts</b></p> <p>What advice would you give a new member of staff?</p> <p>Do you have any issues or concerns you would like to raise about the use of Web or Internet-based technologies?</p> <ul style="list-style-type: none"> <li>• time / effort involved to produce materials</li> <li>• institutional pressure to use new technology</li> </ul> <p>Where do you see your usage going next? - more tech use, less, different</p> <p>Would you like to add anything else?</p>	



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## **Appendix B: Making contact – pilot study**

### ***Part One - Sample contact e-mail from the pilot study***

Hello,

I am a first year research student at the Institute of Educational Technology at the Open University. X suggested I contact you.

I am interested in the use of Web and Internet-based technology for teaching and learning in Higher Education.

My focus is on how practitioners (i.e. lecturers) are applying these technologies.

Would it be possible for me to talk to you, or could you put me in contact with practitioners, in your institution, who are using the 'new' technologies?

I am in the process of setting up a pilot study and would be grateful for any help you could offer.

Thank you,

Sue Morón-García



***Part two - Short description of the pilot study (circulated to some prospective participants)***

My pilot study requires that I talk to three lecturers from an institution. I am particularly interested in getting hold of the following sorts of participants: those using some form of Web and Internet-based technology to support their teaching, it could be a Virtual Learning Environment (for example WebCT) or just a Web site and an e-mail package. The participants I have from another institution come from the following subject backgrounds: education, computing and social science / humanities. The rationale behind these crude categories is that I am aiming for one person who may have a good idea of his/her own pedagogy, one person who feels comfortable with the technology and someone who may not readily fall into either category. I would like to interview them face-to-face. It will probably take no more than an hour, each.

It would also be really useful for me to talk to a staff developer (as a way of understanding the institutional position with regard to the use of these technologies). Please note that my focus is not on distance education.

# Appendix C: Sample pilot study data

## Part One - Example interview record

<b>Interviewee:</b> A3 <b>Place:</b> University A	<b>Date and time:</b> 8/2/2001 15.00 – 16.10
<b>Background:</b> Time teaching Subject specialism Post	Moved from private sector into teaching – systems auditing Relatively young in department (by about 10 years) Familiar with computers so became dept “expert”, not computer scientist. Degree Politics and economics, Masters development economics, PhD in Public Policy Works for dept that is self-financing – lots of overseas students – makes them more innovative when using things like technology. Job split 3 ways: third each teaching, research, consultancy (mostly overseas – Africa, S Asia, E Asia, E Europe)
<b>Teaching:</b> Methods / Techniques Influences Evaluation	Most students are post experience, 40-45 MBA students, from at least 30 different countries, 90-95% middle management in NGOs / public service. Style of teaching informal as a result – “interactive lectures” i.e. present a point (using ppt), discuss it, gives eg and then asks students for egs, draws on experience – interactive process & recognises students will know more about use of tech in particular organisations. Undergrads (very different type of class) have no experience, so can’t understand so well, perceptions are wrong, stereotypical views – Colleague uses slide show to start teaching undergrads – govt promotional slide showing subsidised bread hand out, students thought handing out guns – believe Africa starving or killing, India hugely overcrowded and starving, China people everywhere. Teaching style has to break down this vs what do you think about this (although do involve bit if this). Students like course because talk about egs they learnt about in theory. use videos / visual tools (visualisation), IMF promotional videos and critically analyse – population video quite effective Advertise for students, have to go out and get students from other depts. Will take part in Guild debates to raise student awareness of issues (and dept). Students have to opt in so tend to be motivated, often involved in campaign organisations. Uses mixture of lectures and seminars, but not formal seminar series where someone asked to give paper and group discusses it (model used when A3 undergrad, but didn’t enjoy it), will orchestrate / chair discussion or panel discussion (uses 3 colleagues, students write questions on cards, like question time). Workshops (group work – given specific things to do - , speakers come in eg Info Managers in UK – will structure / guide activity,



	<p>discussion), two presentations lead from these, mostly for postgrads – gives practical experience of use in jobs when go back home.</p> <p>Uses studies, humour, anecdotes most successfully, to get over points / key concepts (remember quite well), reinforcement – practically based courses.</p> <p>With overseas students problems more usually language - any language problems dealt with by support from a dept in School of Education, to support students. Has participated in research re language used in lectures, particularly slang, has changed way delivered, now makes effort to explain phrases / words and why used. (Students on full time courses have to pass ELS test, short courses don't). Cultural problems – participation can be problematic with some cultures, some don't, some take over, to do with background &amp; training &amp; what used to, some will want to just be told what to think.</p> <p>When something isn't going well: take a break, stop / start to ensure understanding, use illustration / anecdotes, soliciting questions / comments from the floor.</p> <p>Careful about not overloading ppt slides</p> <p>Approachable / relaxed, knows subject, can give eggs</p> <p>Influenced by family – dad a teacher, likes telling anecdotes, relaxed.</p> <p>Training not always applicable with what doing as dept. Changed because of watching other people, knows talks too fast, asks students to warn him.</p> <p>Student comments can be contradictory. Evaluates what doing by informal interaction with students.</p>
<p><b>Use of technology:</b></p> <p>Personal</p> <p>For teaching</p> <p>What affects use?</p> <p>technical support</p> <p>dept. / institutional</p> <p>policy</p> <p>training</p> <p>availability</p> <p>confidence &amp;</p> <p>competence level</p>	<p>Everyone in dept has laptop – every 3 years update technology (policy)</p> <p>Use of WebCT (Uni s/w of choice) for public policy MBA, by end of summer 2001 all IDD (dept) courses will be on WebCT in core form at least – post grad modules, but also run two linked undergrad modules (students from politics, economics, central african studies, geography).</p> <p>WebCT ideal for what wanted (courses marketed as practical) can maintain contact with lecturers if overseas – narrowing gap between distance and classroom learning – keep in contact via e-mail</p> <p>All tech aware, used to using Internet cafes in obscure places – all you need to access WebCT is browser</p> <p>Uses PowerPoint for lectures</p> <p>1st term using WebCT contains lecture notes (can be printed off), awkward to access papers, links to gov policy docs, journals, references. Closed mailing list, discussion list – set up two basic discussions 1. Welcome: who are, who work for – good level of participation; 2. Jargon Q &amp; A, glossary, build up info resource</p> <p>Students have to access WebCT because assignments on there, past exam papers on there, one case study.</p>

	<p>Access for students good, computer labs all over campus, printing a problem because have to pay, pdf files for documents can't cut and paste – standardisation, good presentation.</p> <p>Dept self taught in IT, people tend to just get on with it, courses offered tend to be quite basic; WebCT training provided to get started.</p> <p>A3 would describe self as comfortable with IT, very proficient.</p> <p>Sees WebCT as learning support tool, making life easier – lecture notes vs p/copy, makes him more contactable, enables students to continue interaction outside class, useful for group work. Keen students. Non attendees can catch up. Keen students use everything possible.</p> <p>Tailors WebCT for use of students (hides chat, doesn't see it as useful when students come in and see each other, same reason whiteboard, has real one). Students don't use web page authoring tool, use Front page. Group discussions tend to happen f2f, but students do discuss online and use email to contact each other.</p> <p>No electronic delivery of work, unless unusual circumstances.</p> <p>Changed material students have in front of them – far less dense, made A3 concentrate on what doing in class vs getting subject content across, allows more flexibility, doesn't have to worry about covering everything in class time. Lots print off all slides, lecture notes and bring as booklet 'not really the point'.</p> <p>Tech help there if needed, not used much by others in Uni so fine at moment and WebCT easy to use.</p> <p>Was expecting lots more problems, attitude probs vs tech – student wanted him to print off because of printer probs.</p> <p>Only 3 hours per week.</p> <p>Doubts about e-Uni and doing things by distance learning, being doing part-time MSc Information Management and Business Systems as DL student, doesn't find it as fulfilling as in classroom and 'knows' some students would feel uncomfortable about doing more electronically, so loathed to loose contact time, but is allowing A3 to change what does with contact time – cut down knowledge transmission far more interactive. Allows to bring in more material, access to Web, needs to keep up to date.</p>
<p><b>Advice for new member of staff?</b></p> <p><b>Other issues and concerns?</b></p>	<p>Lots of academics nervous, spends lot of time telling colleagues how easy. Compares to change from Wordperfect to Word. Some see as getting rid of teaching, everything electronic. Sceptical about completely virtual environ.</p> <p>Best initial use is to support teaching, will open avenues for students to explore, students enjoy resource and access to each others and staff who may be abroad, stimulating, encourages students to ask questions. Made him think about what teach and how teach, interested in developing own teaching.</p> <p>Some academics are scared of tech, security of putting materials on Web,</p>



	<p>lots of e-mail, but can be contained within WebCT course.</p> <p>Finds WebCT quick to use and set up, lecture notes already electronic, so just uploaded. Employing someone to create Adobe docs. Finds easy to manage mailing lists, change lecture notes, add docs, new links.</p> <p>Sees tech use increasing especially to support distance elements of courses – about building trust between individuals.</p>
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**Part Two - Sample spreadsheet data**

**LECTURER PROFILE – SPREADSHEET EXTRACT**

Lecturer	Years teaching	VLE use	Institutional VLE available?	Teaching course	Teacher of teachers or research Interest	Responsibility for technology in teaching and learning
A3	3	Y	Y			"familiar with computers so became department expert"

This spreadsheet recorded factual information that might have influenced an interviewee’s teaching such as the number of years the had been teaching, whether or not they had taken part in any teacher training course and whether they had any particular teaching of technology related job responsibilities.

**TEACHING – SPREADSHEET EXTRACT**

Lecturer	teaching methods	Level	style description	any concerns? / further comments
A3	Lectures	Mostly 4, some 2	informal teaching style "interactive lectures", presents a point, discuss it and gives example, students (at level 4) also asked for examples from own experience "interactive process"	use of anecdotes, humour, relaxed
A3	Seminars		not formal seminar series (student gives a paper, all discuss it), holds discussion / debate in the style of Question Time, students submit questions on cards	didn't enjoy formal seminars as a student, so doesn't use them
A3	workshops		activities, group work	

This spreadsheet recorded the way interviewees described their teaching methods as well as the level of teaching they talked about, as I thought this might have had an effect on the methods adopted.



TEACHING INFLUENCES – SPREADSHEET EXTRACT

Influence	lecturer	what they said
Way in which they were taught	A3	Doesn't use formal seminar series where someone asked to give paper and group discusses it (model used when an undergraduate, but didn't enjoy it).
Observing colleagues	A3	"Changed because of watching other people"
Student feedback / evaluations	A3	Student comments can be contradictory. Evaluates what doing by informal interaction with students. "With overseas students [the students he is likely to be teaching] problems more usually language ... I know I talk too fast, I ask students to warn me."
Participation in research on teaching and learning	A3	Has participated in research re language used in lectures, particularly slang, has changed way delivered, now makes effort to explain phrases / words and why used.
Family members	A3	Influenced by family – dad a teacher, likes telling anecdotes, relaxed.
Use of technology	A3	Use of tech / VLE has changed materials students have in front of them - less dense, made him concentrate on what doing in class vs getting subject content across, lead to more flexibility, "doesn't have to worry about covering everything in class time". Tech allows him to cut down knowledge transmission, far more interactive and bring in more material. Made him think about what teach and how teach, interested in developing own teaching.

This spreadsheet recorded the factors, people or ideas that influenced interviewees’ said influenced their teaching. Influences additional to those shown were: institutional, departmental and organisational ethos or culture, previous teaching experience, being observed, student numbers, learning theories or pedagogic approaches and training.

EXTRA ITEMS ABOUT TEACHING – SPREADSHEET EXTRACT

Comment	lecturer(s)	Explanation
lecture as performance (& enthusiasm)	A3	use of anecdotes and humour as part of style
"interactive "	A3	Interactive lectures, presents a point, discuss it and gives example, students (at level 4) also asked for examples from own experience "interactive process"
use of student experience	A3	to illustrate points in lectures
group work	A3	use of group work in workshops when students given specific activities to do

This spreadsheet recorded additional ways that interviewees spoke about their teaching and what they thought their role as a teacher was. It collected comments that I considered to be more abstract than those that I classified as either ‘teaching methods’ or ‘teaching influences’. In particular I recorded comments that might indicate the type of approach adopted and the way interviewees had explained particular key words or jargon used such as “interactive” and “engagement”. Additional comments I recorded related to the use of activities to engage with students, “the problem with lectures” and “the lecture as a performance”, the use of student experience, previous understanding and reflection to inform learning, the use of group work and the importance of feedback. Interviewees also spoke about student and teacher rights and responsibilities and teaching being about building student confidence.



TECHNOLOGY USE – SPREADSHEET EXTRACT

lecturer	s/w, tool	What for / How	Why / motivation
A3	PowerPoi nt	for lectures	
A3	VLE	Lecture notes (standardised pdf format – students can't cut and paste - for easier downloading, although says many students print off all slides and lecture notes and bring them to class in a booklet, "not really the point"), links to govt policy documents, journals, references, students have to access VLE because assignments there, past exam papers and case studies	Some [academics] see as getting rid of teaching, everything electronic. Some also scared of the tech, security of putting materials on the Web, lots of email, but can be contained within the VLE course. Sceptical about completely virtual environment. Best initial use is to support teaching, facilitates student exploration, "students enjoy resource and access to each others and staff who may be abroad", stimulating environment, encourages students to ask questions.
A3	Email	Within VLE - keeps in contact with students when abroad doing consultancy work	
A3	Discussio n list	2 basic discussions: introduction, who work for & jargon question and answer	glossary to build up resource

This spreadsheet recorded the type of technology interviewees said they used, including anything additional to the Web and Internet-based technology that supported their teaching such as presentation packages like PowerPoint and subject specific software, how interviewees said they used the technology and why.

**CONSTRAINTS – SPREADSHEET EXTRACT**

<b>Barriers to technology use</b>	<b>lecturer</b>	<b>Comment</b>
Technical support	A3	Tech help there if needed, not used much by others in Uni so "fine at moment" + VLE easy to use
Resources / equipment for lecturers	A3	Everyone in dept has a laptop (the technology is updated every three years).
Resources / equipment for students	A3	Student access good (labs all over campus) printing a problem because have to pay
Lecturer IT literacy / confidence with technology	A3	Describes self as comfortable with IT, very proficient
ICT / VLE training (availability, suitability)	A3	Self-taught IT user, VLE training available to get started
Perceived usefulness	A3	Doesn't use chat, students see each other face-to-face, a bit of an evangelist "spend a lot of time telling colleagues how easy it is"
Influence of colleagues, ethos of dept or School	A3	Level of colleague comfort with technology quite high - use of Internet cafes OK, VLE use dept policy – by summer 2001 all courses to be on VLE in core form at least

This spreadsheet recorded the comments interviewees made about potential and actual barriers to technology use. In addition to those in the table above were: the time it takes to develop materials, student IT literacy, concerns about intellectual property and confidence in the technology or the robustness of the system.



CONCERNS & THE FUTURE – SPREADSHEET EXTRACT

Lecturer	Comment
A3	Some academics are scared of tech, security of putting materials on Web, lots of e-mail, but can be contained within [VLE] course.

This spreadsheet collected together interviewees’ further thoughts and reflections on technology use and included comments such as their exasperation with colleague disregard for ‘new’ technology (D3) and concerns about a possible decrease in face-to-face contact because of technology use (A2).

# Appendix D: Approaches to teaching inventory

Participant code: .....

## APPROACHES TO TEACHING INVENTORY

This inventory is designed to explore the way that academics go about teaching in a specific context, subject or course. This may mean that your responses to these items may be different to the responses you might make on your teaching in other contexts or subjects.

Please refer to a specific subject / topic area, module or course for which you use the Virtual Learning Environment when completing the inventory (I will ask you more about this specific example in the interview).

Please describe the subject and level here: .....

For each item please circle one of the numbers (1-5). The numbers stand for the following responses:

- 1 – this item was only rarely true for me in this subject.
- 2 - this item was sometimes true for me in this subject.
- 3 - this item was true for me about half the time in this subject.
- 4 - this item was frequently true for me in this subject.
- 5 - this item was almost always true for me in this subject.

*Please answer each item. Do not spend a long time on each: your first reaction is probably the best one.*

		Only rarely	Almost always
1.	I design my teaching in this subject with the assumption that most of the students have very little useful knowledge of the topics to be covered.	1	2 3 4 5
2.	I feel it is important that this subject should be completely described in terms of specific objectives relating to what students have to know for formal assessment items.	1	2 3 4 5
3.	In my interactions with students in this subject I try to develop a conversation with students about the topics we are studying.	1	2 3 4 5
4.	I feel it is important to present a lot of facts to students so that they know what they have to learn for this subject.	1	2 3 4 5

This inventory is used with permission from Keith Trigwell, Institute for the Advancement of University Learning, University of Oxford, Oxford OX1 1PT, UK



Participant code: .....

<i>Please answer each item. Do not spend a long time on each: your first reaction is probably the best one.</i>		Only Rarely	Almost always
5.	I feel that the assessment in this subject should be an opportunity for students to reveal their changed conceptual understanding of the subject.	1	2 3 4 5
6.	I set aside some teaching time so that the students can discuss, among themselves, the difficulties that they encounter studying this subject.	1	2 3 4 5
7.	In this subject I concentrate in covering the information that might be available from a good textbook.	1	2 3 4 5
8.	I encourage students to restructure their existing knowledge in terms of the new way of thinking about the subject that they will develop.	1	2 3 4 5
9.	In teaching sessions for this subject, I use difficult or undefined examples to provoke debate.	1	2 3 4 5
10.	I structure this subject to help students to pass the formal assessment items.	1	2 3 4 5
11.	I think an important reason for running teaching sessions in this subject is to give students a good set of notes.	1	2 3 4 5
12.	In this subject, I only provide the students with the information they will need to pass the formal assessments.	1	2 3 4 5
13.	I feel that I should know the answers to any questions that students may put to me during this subject.	1	2 3 4 5
14.	I make available opportunities for students in this subject to discuss their changing understanding of the subject.	1	2 3 4 5
15.	I feel that it is better for students in this subject to generate their own notes rather than always copy mine.	1	2 3 4 5
16.	I feel a lot of teaching time in this subject should be used to question students' ideas.	1	2 3 4 5

This inventory is used with permission from Keith Trigwell, Institute for the Advancement of University Learning, University of Oxford, Oxford OX1 1PT, UK

# Appendix E: Consent form

## Consent form

### The use of Virtual Learning Environments in Higher Education

Sue Morón-García  
Institute of Educational Technology, The UK Open University, Walton  
Hall, Milton Keynes, MK7 6AA  
s.d.moron-garcia@open.ac.uk 01908-653769

Participant name: .....

(please print)

Position: .....

Subject(s) taught: .....

Institution: .....

Contact details: (e-mail) .....

(phone) .....

I give my permission for the interview data collected by Sue Morón-García (including the tape-recorded interview and the completed Approaches to Teaching Inventory) to be used in the preparation of her thesis and any written reports, presentations and published papers relating to this. Participant codes will be used to identify interviewees in these instances. Neither my institution nor I will be identified by name unless further consent is obtained.

Signed: .....

Furthermore I give permission for the item scores obtained from the Approaches to Teaching Inventory (ATI) to be passed to Keith Trigwell (Oxford University). Neither my institution nor I will be identified by name. This data has been requested for inclusion in the ATI database (this data is used to check the internal reliability of the instrument and to add to the aggregated data).

Signed: .....

Date: .....

Participant code: .....



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**IN**

**ORIGINAL**

# **Appendix F: Making contact - trial & main studies**

## ***Part One - Sample introductory e-mail for main study***

Dear All,

I am a second year doctoral student, based at the OU in Milton Keynes. I am researching the use of Virtual Learning Environments (VLEs) in face-to-face Higher Education. I understand that your University uses WebCT.

My focus is on the way lecturers are applying these technologies and the effect of conceptions about teaching and learning have on the use of technology. I am interested in capturing why and how lecturers are beginning to use this technology (it is recognised that usage may still be in the very early stages).

I am looking for four volunteers (lecturers in Social Sciences or Humanities) who will allow me to interview them about their use of WebCT to support face-to-face teaching. A. Bloggs suggested that I contact you.

The interviews will be recorded and conducted individually and face-to-face. The aim is to take no longer than one hour and I will come to your place of work. I will also ask you to fill out a short questionnaire / inventory (the Approaches to Teaching Inventory - Trigwell and Prosser, 1999). This will take about 10 minutes. I will send it to you, for completion, prior to the interview and will collect it on the day of the interview. Your identity and that of your institution will remain confidential.

Please could you let me know, as soon as possible, if you are interested in taking part? I hope to carry out the interviews over the next three months (from May to the end of July).

Feel free to e-mail me with any queries or concerns.

Thank you,

Sue Morón-García



**Part Two - Main study letter**

Email: [s.d.moron-garcia@open.ac.uk](mailto:s.d.moron-garcia@open.ac.uk)

DATE

ADDRESS

Dear

Research into the use of Virtual Learning Environments in ‘face-to-face’ Higher Education

Thank you for agreeing to talk to me about your use of your university’s Virtual Learning Environment.

The process includes a face-to-face interview of no longer than one hour and the completion of the ‘approaches to teaching inventory’ (Trigwell, K. and Prosser, M. (1999) Understanding learning and teaching: the experience in higher education, Buckingham: Society for Research into Higher Education & Open University Press).

I am sending you the inventory (attached to this letter) and would be grateful if you could complete it prior to the interview; the instructions for completion are at the top of the first page. It is estimated that it will take approximately ten minutes of your time. It is important that you complete it with reference to the subject in which you use the Virtual Learning Environment. Please retain the inventory and I will collect it on the day of the interview.

One of the conditions of use of the inventory is that the raw results be made available to Keith Trigwell and Michael Prosser for inclusion in their database. They use this data to check the internal reliability of the instrument and to add to the aggregated data, however, please rest assured that your identity and that of your institution will remain confidential.

I have included two copies of the consent form, one copy is for your records. I would be grateful if you could read and sign the other copy. I will also collect this on the day of the interview. The data collected will be used in the production of my doctoral thesis, together with papers and presentations relating to this research.

I am very grateful to you for the time and information you are giving me. Please contact me via e-mail or telephone (details above) if you have any queries or concerns regarding the research.

Yours sincerely

Sue Morón-García,  
Research Student

# Appendix G: Main study questions

## Part 1: Sound check and Introduction

It is \_\_\_\_\_am /pm on \_\_\_\_\_. I am talking to \_\_\_\_\_ of \_\_\_\_\_ University.

I would like to start by reassuring you that there are no right or wrong answers, the questions are not loaded. What I am interested in is your opinion and your experience of using a Virtual Learning Environment.

## Part 2: Context

Can you start by telling me which VLE you use?

How long has it been available for use in the university?

How long have you been using this VLE?

+ For how many of your courses and at what levels?

Why did you start using it?

Is there any policy about the use of the VLE?

+ What is it?

## Part 3: ICT comfort level

I am now going to ask about your IT experience in general. Please give me examples of your use in each case:

How comfortable do you feel using a word processing package such as MSWord?

What experience do you have in using a presentation package such as PowerPoint?

What experience do you have in writing Web pages?

What experience do you have regarding participation in online lists or discussions forums?

## Part 4: Training, advice, support and ethos

What training have you had in the use of the VLE?

If something went wrong what would you do?

Do people ask you for help if something goes wrong?

What advice have you had about using the VLE effectively to support your students?

Do people ask you for advice about how to use the VLE?



### **Part 5: One example of VLE use**

Now I would like you to think about the particular context that you were referring to when completing the Inventory:

Can you start by telling me about the students who take this module / course?

[for example: Is it compulsory or optional? + How many students take it? + What level is it at?]

Will you take me through the way in which the VLE is used in this instance?

Why did you use the VLE in this way?

How did you choose which tools to use from the range available in the VLE?

How does all this relate to the course / module assessment?

What feedback have you had from your students about this use of the VLE?

Has the use of the VLE changed anything that you do in face-to-face sessions? + If so, in what way?

### **Part 6: Shortcomings and benefits**

Do you collect student feedback about your courses? What do you do with this feedback?

Have you found yourself using any other ICT tools or software packages to support your teaching?

+ If so, can you explain why?

Is there anything that would help you make better use of the VLE?

Is there any feature of the VLE that is particularly useful for your subject?

### **Part 7: Further comments**

Is there anything about your experience in general with the VLE that you would like to comment on?

+ Can you give me any more examples of your use of the VLE?

Is there anything else that you would like to add?

### **Part 8: Finishing off**

Thank you very much. I will send you a transcript of this interview. If there are any points you wish to clarify at that stage please feel free to contact me (you have my details). I may contact you by e-mail if there are any comments that are unclear on the tape. Is that OK? Thank you for your time.

# Appendix H: Motivation for VLE use

## *Interviewees with 'interest' as their main motivation*

Lecturer	Interest reasons
E3	Used ICT to support teaching and learning at previous institution, encouraged by colleague use at current university.
F3	Interested in seeing how a VLE might support teaching and learning, felt it was important to add to her skills.
G2	Writing VLE policy for School. Previous user of CMC with students. Identified a number of teaching and learning needs a VLE could satisfy.
H1	Looking for a way to support communication and collaboration.
H2	Long term interest in the use of ICT for teaching and learning. VLE was a 'safe' environment for students to collaborate in.
J2	Involved in an external project to develop student skills, researched use of a VLE to support students learning subject specific skills.
L1	Thought a VLE could be used to make the students more active without increasing contact time.
M1	Interested in using a VLE to help students understand the research process.
N1	Chose to use quiz facility because wanted to get students doing class preparation and working between contact time. Already using Web pages for course information.
N2	Wanted to use VLE as the 'front end' for a research Web site, to track usage and control access.
N3	Used VLE to support students across several departments, wanted to create a community of learners.



***Interviewees with mixed motivations - 'interest' and 'pressure'***

Lecturer	Combined interest and pressure reasons
B4	Long-term ICT use led to exploration of VLE. Took on role as a teaching and learning fellow with ICT responsibility because he felt use of ICT was valued more than the traditional research and publishing career tracks. Aware of increasing institutional pressure to make use of a VLE. Aimed to encourage and support colleague use.
E2	Applied for an online learning fellowship out of interest, but found VLE useful as teaching conditions changed.
F2	Previous experience with computer-based materials, moved to VLE use because of the greater interactivity afforded and feeling that students expected to use Web for resources.
F5	Quite familiar with use of ICT for teaching and learning (developed his own interactive accounting software package). Started to use VLE because it enabled him to support large numbers of students more effectively.
J3	Already interested in Web use. Became involved in University's 'Building a Learning Community' project, encouraging VLE use (choice of two). Felt under pressure because of student numbers, also interested in making students more active.
K1	University policy to encourage VLE use (echoed by K2), department advocated a move to VLE use. Already put materials on the Web (students had requested lecture notes, made it possible to access materials not in standard textbooks). Liked VLE for ease of use (compared to creating a series of Web pages).
K2	Previous use of computer-based learning, VLE facilitated greater interactivity, explained as the use of communication tools and links to online information (external Web sites). Thought VLE helped maintain level of support offered to increasing student numbers. Expectation of VLE use departmentally: beginning with minimal course information.
L2	Decision made for her (new to department), but felt she would have used a VLE anyway as it facilitated provision of support for students and she had a positive attitude to technology.
M2	Wanted to use technology to help manage work submitted and to create a class resource. Felt use of ICT would be a requirement in the near future, students would expect to learn ICT skills. Involved with creation of department Web site.
M3	Interested in use of online resources to support student learning, previously created Web pages. Used VLE to create a site that could be accessed by students from several modules, able to control access to sensitive material. Felt VLE use would probably become obligatory because of institutional investment.
M4	Wanted to use VLE to support students on placement and because she thought they should learn communication skills.

### ***Interviewees with 'pressure' as their main motivation***

<b>Lecturer</b>	<b>Pressure reasons</b>
B5	Felt it was necessary to become involved for personal professional development reasons, spotted a teaching and learning role for a VLE which helped alleviate the effect of lack of contact time.
B6	Interested in encouraging students to use the Internet as a source of information, came under pressure to provide guidance (originally hard copy) via a VLE.
E1	Became involved when department needed someone to take up an online learning fellowship: her name was put forward, she felt unable to decline.
F1	VLE use because of student request and feedback from colleagues about use elsewhere.
F4	In charge of large teaching team and many students on a cross-campus module, spotted the management possibilities of a VLE. Saw it as a way of engaging with students who are reluctant to read standard text-based materials.
G1	Already using the Web but told Web pages external to VLE would no longer be supported. Use of Web because of access to images and resources not available from the on site library and up to date information.
G3	Started with VLE because of colleague use. Previous experience of creating 'multimedia' tutorials – exercises and guidance for students written as Web pages.
G4	Previously used Web pages to support teaching and learning, then told to use VLE because that was what would be supported (G1 also).
J1	Department picked as pilot subject for the university online learning project, he agreed to participate because he was the least uncomfortable with ICT.



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**ORIGINAL**

# Appendix I: Policy

University	Policy
B	University expected all modules to be within the chosen VLE, Learnwise, by 2003, beginning with level one. The School's teaching and learning fellow, B4, did not think this would happen, but he was making efforts to set up course 'shells' so that all module or course information could be imported. Use supported by staff in teaching and learning unit and IT services.
E	University offered online learning fellowships to encourage VLE use. Fellows were instructed to design a course to replace some contact time. One member of staff specifically supported this programme. E-learning policy was being developed at the time of the interviews. WebCT was the VLE supported.
F	Push for VLE use had come from the University executive. They had chosen WebCT. Unfortunately they had disbanded the central department that supported VLE development due to financial cuts. One member of staff supported VLE use in two Schools. F3 (teaching and learning fellow) said policy was being formulated and were trying to decide whether to continue with a VLE.
G	University VLE was Blackboard. Use was encouraged in School, G3 said the agreed strategy of use was to enhance rather than replace face-to-face teaching. No specific policy, although G1 thought that the University had "a commitment that all its units will be accessed via Blackboard at a certain point in the future". Both G1 and G4 were told Web sites external to the VLE would no longer be supported. Strategy to get everyone involved comprised of workshops for basic training, disseminating examples of good practice and "relentlessly pursuing everybody and arguing and saying, why aren't you using it?" (G2). G2 thought policy would not work until you can show the value of use and have examples of good practice.
H	WebCT was provided and supported centrally (by one member of staff), but use was exploratory and not subject to any policy. According to H2 "there is a push within the Department to have some Web pages, but that's not within WebCT."
J	Central decision to make two VLEs available to staff: Learning Space available to all (being phased out and replaced by Blackboard), COSE only available after users completed a course examining pedagogy. Development encouraged through the use of pilot subject areas and the provision of monies to pay for development time. VLE use linked to a University wide project: "Building a Learning Community".
K	University decision to adopt Blackboard. Use encouraged and expected in all departments, supported by a central learning technology department.



L	Blackboard use supported by central teaching and learning development unit. In one department (L2) there had been a blanket decision to use the VLE, in the other department (L1) it was personal choice.
M	Strong encouragement from the central teaching and learning unit for VLE use and a large investment in private study labs and teaching rooms equipped with computing facilities. Interviewees offered training courses on WebCT before they began, some of these were online. No pressure to use a VLE, but expectation that this will change because of investment made (M1, M3). M2 (on teaching and learning assessment board) said there was a plan to get a proportion of courses online by 2005, thought that this was not common knowledge.
N	WebCT was available to all staff and supported by a central teaching and learning unit who consulted with staff about their requirements. Seen as individual choice.

## Appendix J: Amount and time of VLE use

Inter-viewee	Number of courses interviewees use a VLE for	Years using a VLE
B4	All courses in the School have admin. (course guides and so on) within the VLE, facilitated by him. Talked about use at level 3.	3
B5	One course at level three	2
B6	One course at level 3, one at level one being prepared and bits and pieces of other courses "... because it's quite a convenient place to shove things ...".	1
E1	Three courses: 2 at level 3 and 1 at level 2	3
E2	One course taught at levels 2 and 3, another at level 2 and intending to use it with postgraduates, level 4.	3
E3	Three courses: 2 at level 4+ and one at level 1	3
F1	Two courses: a core module at level 1 and a level 2 and 3 option module	2
F2	Two courses: a level 3 core module and a level 2 and 3 option module	3
F3	One level 3 module, use of the VLE is optional, the course is compulsory	2
F4	One level 1 whole year module	2
F5	Two at level 1	3
G1	Three or four at levels 2, 3 and 4 (involved in about 11 as support)	2
G2	Level 2 and level 3 (next year planning levels 1 and 4)	1.5
G3	One at level 2, developing one other at level 1	2
G4	Four at levels 1 to 3, all the courses taught	1.5
H1	Two at level 4 and one at level 1	4
H2	Various: one at 1 undergraduate level and two at postgraduate level (1 distance postgraduate)	4
J1	Level 1 core course (hoped to use it for level 4, but turned out to be more complicated than he thought)	4
J2	One at level 1 (tried for a level 3 dissertation preparation module, but hindered by registration problems)	4
J3	Three undergraduate modules, developing a level 4 site	4
K1	Levels 2 and 3 (all courses have a presence)	2
K2	All courses taught have a site	2



L1	All courses have admin. within the VLE, teaching on three at level 1	2
L2	One site supporting three courses at level 4, teaches 3 cohorts / courses together i.e. common module	2
M1	One at level 2, developing one other at L1	2
M2	Tried to support two courses at level 2 – used a VLE for one year, unsuccessfully	(1)
M3	Six courses were supported by WebCT, some re-evaluation going on	3
M4	One at level 3	0.5
N1	One to support a courses taught at levels 2 and 4	1
N2	One at level 4	1
N3	One site to support courses across levels 1 to 3	1